

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

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ESTABLISHED IN 1831.

PUBLISHED WEEKLY BY J. H. SCHULTZ & CO., AT NO. 9 SPRUCE ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. X., No. 26.]

SATURDAY, JULY 1, 1854.

[WHOLE NO. 950, VOL. XXVII.

PUBLISHED BY J. H. SCHULTZ & CO., NO. 9 SPRUCE ST.

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far outweighed by the matter of convenience; or, in other words, the *Gauge* question is no longer an open one, only where there are no Railroads. It is universally conceded that where the wide gauge exists, the same width should be observed in new works, and *vice versa*, where the narrow *Gauge* prevails.

With such a rule controlling the question of *Gauge*, the propriety of which will not be challenged, we have been entirely at a loss to account for the [adoption of the 6 foot *Gauge* on the Ohio and Mississippi, and Louisville and Nashville Railroads. All the lines intersecting the former will have the 4 foot 8½ inches *Gauge*; those intersecting the latter, 5 feet; *Gauges*, which must entirely isolate them from such connecting lines, and prove most injurious, if not fatal, to their success.

While it is still a mooted question what width of *Gauge* is the best, no one will question the very great importance of *uniformity*. A break of *Gauge* may, and often does operate to check almost entirely the movement of merchandise on any particular route. The expense due to a change of freight from one car to another, is variously estimated as equal to a movement of from 50 to 100 miles. But the mere cost and loss, arising from *transhipment*, are not so great, probably as those arising from the delay, occasioned. The breaks of *Gauge* at Erie and the Pennsylvania State line on the Lake Shore Road, caused immense losses, not only in *transhipment*, but in the destruction of property. In fresh meats particularly, the loss was enormous; whole cargoes of such freights becoming putrid before reaching New York. So great was the inconvenience arising from the above breaks, we have no doubt that the Lake Shore line alone would gladly have given \$500,000 to have got rid of them, could it have done no better. Here is a practical instance of the evils of two *Gauges*, and one which will always be repeated whenever they come into conflict.

Let us see how the break of *Gauge* will affect the value of the Ohio and Mississippi Railroad. Cincinnati is the best market for nearly the whole of Central and Southern Indiana. These portions of the State are now covered with a net work of Railroads of the narrow *Gauge*. Did the *Gauge* of the former correspond to these, it would constitute them a convenient *trunk* to Cincinnati. Before

reaching the State of Illinois, it crosses eight important lines of Railroad, five of which are now in active operation. It is from the district traversed by these roads, the Ohio, Mississippi is to draw its traffic. Instead of building a road to accommodate this traffic, it has taken the most effectual course to repel it. Every pound of freight received from any connecting line, must break bulk, even if received within ten miles from its first point of shipment. The injurious effect of such a break is strikingly illustrated by the direction which the freight brought to the line of the Ohio and Mississippi by the Indianapolis and Cincinnati now takes. Did the *Gauges* of the two roads correspond, all this freight would pass over the Ohio and Mississippi Road; as it is, it is now forwarded from Lawrenceburg to Cincinnati by water. A large number of passengers take the same direction. By the adoption of an exotic *Gauge*, the Ohio and Mississippi Road has failed to make herself a part of a trunk line to Cincinnati, for the country traversed and has cut herself off from her very best source of business, without a penny to show as an equivalent for the loss.

The same strain of remark applies to the relations of the above with all the other roads it crosses. The evils arising from the break of *Gauge* in each case are the same in *kind*, only less in proportion to the distance over which freight and passengers are to be carried. The truth is, no method could have been devised by the Ohio and Mississippi Railroad, so calculated to drive away business instead of attracting it; of exciting the ill will and hostility of the people upon its line, instead of their good will. The result probably will be that the section traversed by the above road, aided by the various and powerful Railroad interests which exist, will unite upon the construction of a new line to Cincinnati, with a *Gauge* adapted to the route traversed. Already are various roads commenced, with narrow *Gauges* running west, from Cincinnati the greater part of which, probably never would have been proposed, but for the adoption of the wide *Gauge* by the Ohio and Mississippi. A double mischief is the result, a direct loss of trade to the road, and in the end, rival lines which must divide a business which otherwise might have been monopolised by the former.

A similar view may be taken of the impolicy of

American Railroad Journal.

Saturday, July 1, 1854.

Gauge of Railroads.

The width of *Gauge* best adapted to economical transportation, has been a question which has excited a vast deal of discussion, particularly in England, and has divided Railroad Engineers into two parties, distinguished by the terms *wide* and *narrow Gauge*. The prevailing gauge was adopted not for the reason that 4 feet and 8½ inches, was supposed to be the best one at the time, but because it corresponded to the width of the Coal *tram* road to which the Railroad succeeded. It was natural therefore, as the Railway expanded into a mighty system, that the propriety of any plan of construction arbitrarily, or accidentally adopted, should be questioned and discussed; and no question in Railroad Engineering has excited so much discussion, as that of the width of *Gauge*.

The extreme limits of the *Gauge* advocated in this country are 6 feet, and 4 ft. 8½ in. For what we propose to say, it is not necessary to recapitulate the arguments in favor of either, as the greatest stickler for either extreme is forced to admit, that the value of the *difference* between the two is

introducing the wide gauge into Kentucky, for roads proposing a connection with Nashville and Knoxville. All the roads intersected by the Louisville and Nashville railroads will have a gauge of 5 feet, involving a transhipment of all the business received from them. On the other hand, the Cincinnati line, which is now nearly completed to Danville, to be extended to Nashville by way of Glasgow, will have the gauge of the connecting roads, and will compete, and successfully, for the trade aimed at by the Louisville and Nashville railroad, the gauge of which will render it another Chinese wall cut off from, instead of drawing the trade toward, Louisville. One reason why this city has extended liberal aid to the above road, is the expectation that it would eventually form the part of a great line to Knoxville, and the Southern Atlantic cities. With this view the Nashville line takes the course in the direction of Knoxville for a considerable distance. But it is easy to see that a six feet gauge can never be carried from Louisville to Knoxville. Any road that is built must form a part of a line to Cincinnati as well as to Louisville. The principal portion of the means necessary for any road from Knoxville to Danville, Ky., must be furnished by the lines interested in the connecting link. As these roads are of the 5 feet gauge, they will, of course, insist upon its adoption of a gauge similar to their own. Should the Louisville and Nashville assist in building such link, it will be one of a dozen, all having a different and uniform gauge. Any road built connecting Kentucky with the Southern lines of railroad must have a five feet gauge. The roads composing the entire line from the Ohio to the South Atlantic and Gulf cities, will naturally favor their complements that have a corresponding gauge, and this will be possessed only by the Cincinnati line. That city will obtain a decided advantage over Louisville, which will find that the transhipment which the six feet track will require, will drive all the business to the very rival from which she has most to fear.

Such are some of the grand results which the Ohio and Mississippi, and Louisville and Nashville are proposing to secure to themselves, by their violation of the most obvious dictates of common sense. Were the object to secure a better gauge than the 4 feet 8½ inches, certainly the 6 feet would not be adopted. This is regarded as too wide by avowedly wide gauge men. In the only two instances in which the question of gauge could be considered an open one, in Canada and West of the Mississippi, not the six feet, but the five and a half feet was adopted. It must be considered that these innovations were made by wide gauge engineers, under circumstances allowing the fullest liberty of adopting the gauge theoretically the best. These facts show that six feet is considered too wide a gauge, even by wide gauge engineers. It is so considered by engine makers. The managers of the Erie road would gladly reduce the width of the track of their road if they could. Upon what principle then, we should like to know, was the 6 foot Gauge adopted on the Ohio and Mississippi, and Louisville and Nashville Railroads; not on the ground of its superiority, for both authority and practice is against such a Gauge, and we happen to know that Mr. Morton, one of the leaders of the wide Gauge party in this country, strenuously opposed its adoption on the former

road, upon the grounds stated by us. Had the wide Gauge been adopted on the ground of its superiority, a width exceeding 5½ feet would not have been used. The true reason in both cases undoubtedly was, the eclat that could be gained out of the use of the extra wide Gauge. If any Gauge is good, the inference assumed was, the wider the better. By such *clap-trap* it was expected that the populace could be tickled, that the merits or demerits, of the project could be hidden under, and all objection silenced, by a sounding title. A six-foot Gauge has been made to stand for a good route, plenty of money and competent management. It is really used to conceal the lack of all these. Against all such nonsense we protest. Against the introduction of such a Gauge, when the narrow is the prevailing one, we protest still stronger. Its use under such circumstances is enough to impeach the judgment of those urging it. It is sufficient reason against their competency to superintend the construction of Railroads. The danger is imminent that the money expended upon each road will be thrown away by the necessity created for the construction of other roads, to furnish the accommodations which the former fail to supply. Such folly ought to be checked or corrected in the outset; and we call attention of the creditors and Stockholders of the above roads to the danger to which they are exposed. Both roads can better afford to sacrifice a million each, than to use any Gauge not in harmony with their connecting lines. Will they not amend their mistakes in time, and not leave them to be corrected by other parties, involving a still greater loss to the former, to say nothing of the cost to the public?

Col. Fremont's Exploration.

Colonel Fremont has addressed to the National Intelligencer an account of his exploration of the *Central* route for a railroad, from which we take the following abstract:

"The country examined," says Col. Fremont, "was from the Missouri frontier, at the mouth of the Kansas River, to the Valley of Parowan, at the foot of the Wahsatch Mountains within the rim of the Great Basin, at its south-eastern bend—along and between the 38th 39th parallels of latitude; and the whole line divides itself naturally into three sections, which may be conveniently followed in description.

The first or eastern section consists of the great prairie slope, spreading from the base of the *Sierra Blanca* to the Missouri frontier, about 700 miles; the second or middle section comprehends the various Rocky Mountain ranges and interlying valleys, between the termination of the great plains at the foot of the *Sierra Blanca* and the Great Basin at the Parowan valley and Wahsatch Mountains, where the first Mormon settlement is found, about 450 miles; the third or western section comprehends the mountainous plateau lying between the Wahsatch Mountains and the *Sierra Nevada*, a distance of about 400 miles.

The country examined was upon a very direct line—the traveled route being about 1,550 miles over an Air-line distance of about 1,300 miles.

The First section.—Four separate expeditions across this section, made before the present one, and which carried me over various lines at different seasons of the year, enable me to speak of it with the confidence of intimate knowledge. It is a plain of easy inclination, sweeping directly up to the foot of the mountains which dominate it as highlands do the ocean. Its character is open prairie, over which summer traveling is made in every direction.

For a railway or winter traveling road the route would be, in consideration of wood, coal, building

stone, water and fertile land, about two hundred miles up the immediate valley of the Kansas, (which might be made one rich, continuous corn-field,) and afterward along the immediate valley of the Upper Arkansas, of which about two hundred miles, as you approach the mountains, is continuously well adapted to settlements as well as to roads. Numerous and well watered and fertile valleys—broad and level—open up among the mountains, which present themselves in detached blocks—outliers—gradually closing in around the heads of the streams, but leaving open approaches to the central ridges. The whole of the inner-mountain region is abundant in grasses, wood, coal and fertile soil. The Pueblos above Bent's Fort prove it to be well adapted to the grains and vegetables common to the latitude, including Indian corn, which ripens well, and to the support of healthy stock, which increase well, and take care of themselves summer and winter.

This character of country continued to the foot of the dividing crest, and to this point our journey resulted in showing a very easy grade for a road, over a country unobstructed either by snow or other impediments, and having all the elements necessary to the prosperity of an agricultural population, in fertility of soil, abundance of food for stock, wood and coal for fuel, and timber for necessary constructions.

The climate is mild and the winters short; the autumn usually having its full length of bright, open weather, without snow, which in winter falls rarely and passes off quickly. In this belt of country lying along the mountains the snow falls more early and much more thinly than in the open plains to the eastward; the storms congregate about the high mountains and leave the valleys free. In the beginning of December we found yet no snow on the *Huerfano* river, and were informed by an old resident, then engaged in establishing a farm at the mouth of this stream, that snow seldom or never fell there, and that cattle were left in the range all the winter through.

The above description is so different from all others, that there seems to be a direct conflict of testimony in reference to the climate, soil and productions of the Arkansas Valley and the eastern slope of the Rocky Mountains. Major Emory, who accompanied Gen. Kearny's expedition which took the route of the Arkansas, says in his report, that "near the meridian of 99, the country changes almost imperceptibly, until it merges into *arid* and *barren* wastes. The transition is marked by the occurrence of *cacti* and other spiny plants, the first of which was seen in longitude 98. The country embraced between this point and *Bent's* Fort is totally different in character from that east of it." The Arkansas for this distance runs over a bed of loose shifting sand, and falls at the rate of 7 4-10 feet per mile. The bottom lands, which can be irrigated, are from one-half to two miles wide. "Beyond these," says Major Emory "the ground rises by gentle slopes into a wilderness of sand hills on the south, and *prairie* on the north. The soil of the plains is a *granitic* sand, and is intermixed with the exuviae of animals and vegetable matter, supporting a *scanty* vegetation. The eye wanders over these immense wastes in search of trees. *Not one is to be seen.* The only tree found on the bottom lands is the *Cotton-wood*. And it frequently happens that not one of these is seen in a whole day's journey; buffalo dung and the wild sage constituting the only fuel to be procured." Such is Major Emory's account of a region which Col. Fremont describes as "having all the elements necessary to the prosperity of an agricultural population, in fertility of soil, abundance of food for stock, wood and coal for fuel, and timber necessary for constructing." The only

tree met with is the cotton-wood, which is notoriously unfit for the construction of a railroad.—In this conflict of testimony, who shall be regarded authority?

Upon the upper waters of the Arkansas, Col. Fremont says the climate is *mild* and the winters *short*. We do not see how a mild climate and short winter can prevail at an elevation varying from 4,000 to 8,000 feet above the sea, in latitude $38^{\circ} 30'$. Certainly Col. Fremont's statement conflicts with what has been supposed to be an unvarying law, that the mercury falls as we ascend from the earth's surface. The change due to 4,000 feet elevation is equal to about 13 degrees of latitude, which would give Bent's Fort the climate of Pembina Settlement on the Red River of the North, and a colder climate than that of Lake Superior. Such, we have no doubt, is the fact. The higher we ascend from Bent's Fort the greater the degree of cold, till in fact we enter, as far as the climate is concerned, the *Arctic Circle*.

We are not left to conjecture as to the climate of Bent's Fort. During the time that General Kearney camped in its vicinity from July 27th to August 3d, the range of the thermometer did not exceed 66. The following winter, Lieut. J. W. Abert, returning from New Mexico to the United States, reached Bent's Fort Jan. 17, 1847. "The thermometer," he says in his report, "has all day been 7 degrees *below* Zero; and I was told that for several days previous the temperature of the air had been of the same degree of coldness."—This account is what we should expect from the great elevation of Bent's Fort. The latter expedition, for the whole distance, suffered terribly from the intensity of the cold. We cannot reconcile the evidence furnished by our knowledge of the great elevation of Bent's Fort, of the head waters of the Arkansas, and the direct testimony above quoted, with Col. Fremont's description.

Col. Fremont describes the country at the head of the Del Norte as similar to that at the head of the Arkansas. He says—

At this place the line entered the middle section and continued its western course over an open valley country, admirably adapted for settlement, across the San Luis valley, and up the flat bottom lands of the Sah-watch to the heights of the central ridge of the Rocky Mountains. Across these wooded heights—wooded and grass-covered up to and over their rounded summits—to the *Cochatope* pass, the line followed an open easy wagon-way, such as is usual to a rolling country. On the high summit lands were forests of coniferous trees, and the snow in the pass was four inches deep.—This was on the 14th of December. A day earlier, our horses' feet would not have touched snow in the crossing. Up to this point we had enjoyed clear and dry pleasant weather. Our journey had been all along on dry ground; and traveling slowly along, waiting for the winter, there had been abundant leisure for becoming acquainted with the country. The open character of the country, joined to good information, indicating the existence of other passes about the head of the Sah-watch. This it was desirable to verify, and especially to examine a neighboring and lower pass connecting more directly with the Arkansas valley, known as the Pow-che.

"But the winter had now set in over all the mountain regions, and the country was so constantly enveloped and hidden with clouds which rested upon it, and the air so darkened by falling snow, that exploring became difficult and dangerous, precisely where we felt most interested in making a thorough examination. We were moving in fogs and clouds, through a region wholly unknown to us, and with-

out guides, and were therefore obliged to content ourselves with the examination of a single line, and the ascertainment of the winter condition of the country over which it passed, which was in fact the main object of our expedition.

This does not look very favorable for a *winter* route at the head waters of the Del Norte, especially as it took Col. Fremont's party 10 days to make *one hundred miles*. We are still incredulous that a country at an elevation of from 8,000 to 10,000 feet above the sea, can be admirably adapted for settlement.

After crossing the *Sierra Blanca*, Col. Fremont found, in his opinion, a good route for a railroad to the Mormon Settlement at Parowan, though the account he gives of his journey over this part of his route would certainly lead to a different conclusion. From the head of the Del Norte to this place, the route for the greater part of the way is through lofty mountain ranges, more or less obstructed by snow. Parowan is in the great basin of Utah, and lies on the western slope of the Wahsatch range.

At Parowan (says Col. Fremont) the line of exploration entered the third or western section, comprehending the mountainous *plateau* between the Wahsatch Mountains and the *Sierra Nevada* of California. Two routes here suggested themselves to me for examination; one directly across the *plateau* between the 37th and 38th parallels; the other keeping to the south of the mountains, and following for about two hundred miles down a valley of the Rio Virgen—*Virgin River*—thence direct to the Tejon Pass, at the head of the San Joaquin Valley. This route down the *Virgin River* had been examined the year before, with a view to settlement this summer by a Mormon exploring party under the command of Major Steele of Parowan, who (and others of the party) informed me that they found fertile valleys inhabited by Indians who cultivated corn and melons, and the rich ground in many places matted over with grape vines. The Tejon Passes are two, one of them from the abundance of vines at its lower end) called *Caxon de las Uvas*. They were of long use, and were examined by me, and their practicability ascertained in my expedition of 1848-'49; and in 1851, I again passed through them both, bringing three thousand head of cattle through one of them.

The practicability of the Tejon Passes was not ascertained by Col. Fremont. This still remains a mooted question, as will be seen by the following account of them by Lieut. Williamson, to whom has been entrusted their examination, and who after careful exploration reports as follows:

"Still further south there are two passes leading into the head of the Tulare Valley, at a place called Tejon. A wagon road passes through one, which is beginning to be known as the Tejon Pass, and it is the worst wagon road I ever saw. The pass fortunately presents some good features for a railroad. Two small streams run from near the summit—one into the basin, the other into the Tejon—but their sources are separated by a narrow divide over 1500 feet high. I have great hope that a survey will show that should this ridge be tunneled, the road can pass up one creek through the tunnel, and down the other. The summit of the Tejon Pass is 4,500 feet above the Tulare Valley.

The other pass coming into the Tejon is called the *Canada De Las Uvas* (grape ravine). In this a small brook descends into the Tejon, 1,400 feet in 4 miles, while the rest of the pass is of gentle ascent and descent. The summit is 3,100 feet above the Tulare Valley—the same height as that of the passes before mentioned. Two modes would naturally suggest themselves for making a road through this pass. One, a system of inclined planes with stationary engines over the 4 miles above mentioned; a second, by following along the side

hills. Before I express an opinion on these points I must wait till a survey of the pass is made. I intend to leave here to-morrow for the Tejon, 26 miles distant, and shall run a line of levels through the Tejon Pass and the *Canada De Las Uvas*, at the same time making an accurate sketch of the hills and ravines on each side. From the data thus obtained, I shall be able to give full information on the subject."

The examination of Lieut. Williamson shows the substance of what is so practicable. He hopes the difficulties which appear insurmountable may yield to a further and more careful exploration. We think that these examinations are entitled to much greater weight than the mere dictum of Col. Fremont.

"Knowing the practicability of these passes," continues Col. Fremont, "and confiding in the report of Major Steele, as to the intermediate country, I determined to take the other (between the 37th and 38th parallels,) it recommending itself to me as being more direct towards San Francisco, and preferable on this account for a road, if suitable ground could be found; and also as being unknown, the Mormons informing me that various attempts had been made to explore it, and all failed for want of water. Although biased in favor of the *Virgin River* route, I determined to examine this one in the interests of geography, and accordingly set out for this purpose from the settlements about the 20th of February, traveling directly westward from Cedar City, (eighteen miles west of Parowan.) We found the country a high table land, bristling with mountains, often in high isolated blocks, and sometimes accumulated into considerable ranges, with numerous open and low passes.

"We were thus always in a valley and always surrounded by valleys more or less closely, which apparently altered in shape and position as we advanced. The valleys are dry and naked, without water or wood; but the mountains are generally covered with grass and well wooded with pines; springs are very rare, and occasionally small streams at remote distances. Not a human being was encountered between the *Santa Clara* river near the Mormon settlement and the *Sierra Nevada*, over a distance of three hundred miles. The solitary character of this uninhabited region, the naked valleys without water courses, among mountains with fertile soil and woods and grass abundant, give it the appearance of an unfinished country.

"Commencing at the 38th, we struck the *Sierra Nevada* on about the 37th parallel about the 15th March.

"On our route across we had for the greater part of the time, pleasant and rather warm weather; the valley grounds and low ridges uncovered, but snow over the upper parts of the higher mountains. Between Feb. 20 and 17th of March, we had several snow storms, sometimes accompanied with hail and heavy thunder; but the snow remained on the valley grounds only a few hours after the storm was over. It forms not the least impediment at any time of the winter. I was prepared to find the *Sierra* here broad, rugged and blocked up with snow, and was not disappointed in my expectation. The first range we attempted to cross carried us to an elevation of 8,000 or 9,000 feet and into impassable snow, which was further increased on the 16th by a considerable fall.

"There was no object in forcing a passage, and I accordingly turned at once some sixty or eighty miles to the southward, making a wide sweep to strike the *Point of California Mountain*, where the *Sierra Nevada* suddenly breaks off and declines into a lower country. Information obtained years before from the Indians led me to believe that the low mountains were broken into many passes, and at all events I had the certainty of an easy passage through either of Walker's passes.

"When the *Point* was reached, I found the Indian information fully verified; the mountain sud-

denly terminated and broke down into lower grounds, barely above the level of the country, and making numerous openings into the valley of the San Joaquin. I entered into the first which offered, (taking no time to search, as we were entirely out of provisions and living upon horses,) which led us by an open and almost level hollow, thirteen miles long, to an upland not steep enough to be called a hill, over into the valley of a small affluent to Kern river; the hollow and the valley making together a way where a wagon would not find any obstruction for forty miles.

"The country around the passes in which the Sierra Nevada here terminates declines considerably below its more northern elevation. There was no snow to be seen at all on its eastern face, and none on the pass; but we were in the midst of opening spring, flowers blooming in fields on both sides of the Sierra.

"Between the point of the mountains and the head of the valley at the Tejon, the passes generally are free from snow throughout the year, and the descent from them to the ocean is distributed over a long slope of more than 200 miles. The low dry country and long slope, in contradistinction to the high country, and short, sudden descent and heavy snows of the passes behind the bay of San Francisco, are among the considerations which suggest themselves in favor of the route by the head of the San Joaquin."

We must confess ourselves incredulous as to the correctness of Col. Fremont's observation upon his newly discovered passes. In the first place, had such passes existed, they must have been known and traversed. The indications furnished by the course of the streams, and the general slope of the Sierra Nevada range, is decidedly against such depression as he speaks of. Neither is it possible that the descent from these newly-discovered passes can be distributed over 200 miles to the sea. His new route crosses the mountain ranges at right angles to their general direction, and of course must fall more rapidly into the San Joaquin Valley than those entering the head of the valley through Walker's or the Tejon passes, and which can follow down the sides of the mountain to the plain below. Yet through these passes we have seen that the head of the valley cannot be reached short of an incline of 250 or 300 feet to the mile.

We are sorry to say in conclusion, that Col. Fremont's account of his tour seems to us to be the argument of a partisan, instead of an impartial record of actual observations. To publish, without remarks, his account of his tour, would help to mislead the public instead of instructing it.—More than this, we have good reason to believe that the publication of Capt. Gunnison's notes will establish beyond contradiction the incorrectness of Col. Fremont's assertion that a favorable route is found upon his line through the great Rocky Mountain Range. We learn that these mountains cannot be crossed by any practicable line, nor without long tunnels, which of themselves render his route impossible. We presume that Col. Fremont took no measurements that can be relied upon. The rapidity with which he pushed forward rendered it impossible for him to take such. On the contrary, Capt. Gunnison's party was organized expressly for scientific observation, which renders it altogether probable that his measurements of *Sangre de Cristo* and Coochetopee passes are correct. Should these observations contradict the report of Col. Fremont *in toto*, as we are assured they will, they will place him in an awkward predicament. We have had enough

of partisan statements already; and if Col. Fremont be such, he will suffer more in his reputation than he did physically upon his most hazardous and adventurous journey.

Alabama and Tennessee Railroad.

GRANTS OF LAND TO RAILROADS.

The above Company have memorialized Congress for a grant of land to aid in the construction of this line of Railroad. The following is the substance of the memorialist.

An inspection of the Map of the United States will indicate that the most direct and expeditious route for travel and the United States Mail, between the northeastern cities of the Union and the Gulf of Mexico and Texas is, commencing at Portland, Maine, through Boston, New York, Philadelphia and Baltimore to Washington City; thence in a southwest direction through Alexandria and the Valleys of Virginia to Abingdon; thence in the same direction and following the same valleys through East Tennessee and Northwest Georgia to their termination in Middle Alabama; thence in the same course over the level plains of Middle and South Alabama, by Selma to Mobile and to New Orleans. This general route with slight exceptions was selected by General Bernard, the distinguished Chief Engineer of the United States, as early as 1820, after thorough explorations, as the most direct and practicable route for the transportation of the United States Mail.

Within the last few years, without any concert of action, but attracted by the vast amount of commerce and travel tributary to this line and the great natural advantages for railway construction offered by the North Atlantic Coast and by the valleys of Virginia, Tennessee, Georgia and Alabama, the different States intersected by the route have constructed and placed under contract a system of railways which in three or four years will present a *grand National Trunk Line of continuous Railways* on this route, from Maine to Texas.

One of the most important links in this great National Chain of Railroads is the Alabama and Tennessee Rivers Railroad.

This great *National Trunk Line* may be said to commence at Portland, Maine; thence it passes through Boston, New York, Philadelphia and Baltimore to Washington City. Up to this point the line is in operation; from Washington to Alexandria is a short gap of seven miles, at present supplied by steamboats. From Alexandria, the line is continued southwardly by the Orange and Alexandria Railroad, and its extension to Lynchburg, 174 miles, of which 90 miles are in running order and the remainder under way. From Lynchburg, the Virginia and Tennessee Railroad continues the great national line by way of Abingdon, to the Northern boundary of Tennessee, 205 miles; 100 miles of it being in operation and the remainder in the course of rapid construction. Through East Tennessee, the East Tennessee and Virginia Railroad, one hundred and thirty miles long, and the East Tennessee and Georgia Railroad 111 miles long, extend the Grand Line by Knoxville to Dalton, Georgia; thence through Georgia to the Alabama State line, it is continued by a railroad 45 miles, recently chartered, and on which subscriptions are being made; thence the Alabama and East Tennessee Railroad, 45 miles, extends the grand line to the Alabama and Tennessee Rivers Railroad at Jacksonville; thence the Alabama and Tennessee Rivers Railroad continues the Grand Line 145 miles to Selma; of this distance 56 miles are in running order, and about 70 miles are graded. From Selma to Mobile, the Mobile and Selma 45 miles and Mobile and Girard 100 miles long, extend the line to Mobile. The Mobile and Selma Railroad has been recently chartered and the Mobile and Girard Railroad Company have means nearly sufficient to build their section. From Mobile to New Orleans the grand line is still continued by the Mobile and New Orleans Railroad 139 miles; this railroad is in the hands

and under the direction of gentlemen of wealth and of acknowledged financial abilities, and will from its admirable location for business be speedily constructed. The Grand Trunk Line does not stop at New Orleans, but is taken up and carried westward into Texas, by the New Orleans and Opelousas Railroad now in the course of construction with large means; and also by a railroad from New Orleans to the Sabine River in the direction of Galveston and Houston, for which grants of land are also asked. The last annual reports of the railroad companies composing the grand route south of Washington to Dalton, Georgia, give assurances that this part of the line will be in operation in 2 years or less time. From Dalton southwardly a part of the line is now available by steamboat navigation; a considerable portion will be in running order in two years, and should Congress aid by grants of land, as now respectfully asked for, the whole distance can be placed in working order in three years or perhaps less time, and thus will be accomplished the longest continuous line of railway in one general direction in the United States or elsewhere, with the exception of the proposed Pacific Railroad.

By tracing on a map the lines of railroad which have been thus described, it will be seen that the Alabama and Tennessee Rivers Railroad with its connections and extensions, will afford an outlet to the Gulf of Mexico for all that section of the United States north of a line drawn from Richmond, Virginia, to Selma, Alabama, and east of a line drawn from Selma to the eastern boundary of Lake Erie, a territory containing about 324,000 square miles, and a population of 13,000,000. And that to a very large portion of this territory it offers the most direct route for travel and the transportation of the United States Mail to the Gulf of Mexico and Texas.

There is, however, another important national consideration why the Alabama and Tennessee Rivers Railroad should be immediately constructed and assisted in the manner proposed.

Sir Charles Lyell in his geological exploration in the United States, speaking of the Alabama coal field, says that 'It forms the southern prolongation of the great Appalachian coal field. Its geographical situation is peculiarly interesting, for being situated in latitude 33 deg. 10 min. north, it constitutes at present the *extreme southern limit* to which the ancient carboniferous vegetation has been traced in the northern hemisphere, whether on the east or the west side of the Atlantic.'

To this may be added that it is the nearest coal field of any yet discovered in the Gulf of Mexico. The Alabama and Tennessee Rivers Railroad taps the Alabama coal field at its most southern extremity, and connects it with the Gulf of Mexico by only 54 miles of railroad, and 300 miles of descending navigation by the Alabama river. Such are the advantages offered by this railroad and river transportation, that coal may be delivered at Mobile at from 4 to 5 dollars per ton, and in the ports at the Gulf at from 6 to 7 dollars per ton. These charges will be considerably reduced by the construction of the Mobile and Girard and Mobile and Selma railroads. The coal is of an excellent quality for steam purposes, and the supply is abundant.

The great national importance of having adequate and cheap supplies of coal in the Gulf of Mexico, will be recognized by all acquainted with the value and necessity of steam marine in modern warfare and commerce.

A large portion of the lands asked to be granted for this railroad, have been in the market for upwards of twenty years, and still belong to Government because valueless for want of an outlet to a market. The construction of this road which can soon be accomplished by the aid of alternate sections as proposed, would enhance the value of the remainder of the lands to an extent which would richly repay the Government for the grant.

Finally, the Alabama and Tennessee Rivers Railroad would prove of immense national ad-

vantage in the defences of the Gulf of Mexico, as it would present the best route by which the troops and supplies of a large portion of the west and northeast could be transported to the Gulf with the utmost safety, certainty and dispatch."

New York and New Haven Railroad.

The recent annual report of this company gives the following account of its operations for the past year.

The gross earnings of the year, April 1, 1853, to March 31, 1854, have amounted to \$961,277, as follows:

From passengers, fares... \$743,691 93

From passengers, commun-

ication..... 32,558 10

Passenger receipts.....	\$776,250 63
From freight.....	144,932 54
From mail service.....	14,722 82
Miscellaneous sources.....	17,026 71
Balances from connecting roads.....	8,345 64

Total as above..... \$961,277 74

The current charges for the year's service, exclusive of large expenditures upon the old track in ballasting and adjusting the grades to correspondence with the new or second track, have amounted to \$467,654 76.

Transportation, wages salaries, &c., &c..... \$162,340 97

Repairs of road, bridges, and build-

ings..... 80,067 68

Repairs of locomotives, tenders, cars,

&c., &c..... 70,143 93

Oil, tallow, waste, &c..... 15,846 21

Wood consumed..... 100,352 45

Haulage of cars in New York..... 33,903 52

Total as above..... \$467,654 76

The net earnings of the Transportation Department for the year are thus \$493,622 98.

Of this sum the Harlem Railroad Company have been paid for the use of their Road \$74,026 55.

Leaving a balance of net earnings to the credit of the profit and loss ac-

count of..... \$419,596 43

To which add dividend on Harlem

Stock..... 6,400 00

And balance to credit 1st April, 1853 20,276 70

Total on 1st April, 1854..... \$446,273 13

From this amount have been paid \$182,938 95 for annual charges, interest, &c.

The Canal Railroad of Connecticut, leased by the New York and New Haven, has been operated the past year at a loss of \$25,583.

A condensed balance sheet on 1st April, 1854, stands as follows:

Dr.—Railroad, with two tracks from New-Rochelle to New Haven with all appendages, cost..... \$3,873,831 04

Equipment—23 Locomotives,

Cars, &c..... 601,319 23

Property, in New York, &c.,

&c..... 656,798 12

Total..... \$5,131,948 39

Cr.—By Capital Stock \$3,000,000 00

By Bonds issued..... 1,991,000 00

By Sundry Ac-

counts, Loans,

&c..... 140,943 39

Total..... \$5,131,948 39

The expenditures necessary for the completion of the bridges and some other works, not inclusive of a double track from New-Rochelle to the Harlem Road, will probably increase the capital accounts to \$5,250,000.

The apparent net earnings of the past year were \$262,834 18. These have been used in payment

of claims made upon the company in consequence of the Norwalk calamity, by which 45 lives were lost, and a large number of persons injured. Of these claims, 40 have been settled at a cost of \$252,311 35. No dividend has been declared for the past, and we presume none will be for the first half of the present year.

The great depreciation of the stock of this company has undoubtedly been helped by the Norwalk accident. The road, however, has had its life blood squeezed out of it in the same manner, as have the Erie and the Central. It has cost at least 50 per cent. more than it should. It probably occupies the best line for business in the United States, and there is no sufficient reason why it should not command as great a premium as the roads between New York and Philadelphia. In the latter case, the managers make their money out of the *earnings* of their road. In the former, there has been altogether too much money made out of *construction*, to allow much for dividend.

Railroad Runners.

There are four railroad companies in the United States that probably pay annually \$100,000 each to *runners*. Others pay large sums, proportioned to the rivalry to which they are subject, or their desire to get business.

A portion of these *runners* are men entirely destitute of character. In fact, the more unprincipled, the better fitted they are for their vocation. Their success is measured by the adroitness with which they can impose upon the unwary traveler, by representing to him that *their* line is the *shortest, cheapest*, and most comfortable route, in spite of the fact that it is the inferior one in all these respects. The test of fitness of a good runner is his *success*, no matter by what means this success is obtained.

It is not pretended that runners increase travel. It is admitted that they are a pest to the traveling public and society. They do not increase the aggregate receipts of railroads. They are the indication and the result of a rivalry which costs a vast sum, while in the long run they do not add a penny to the receipts of any road, as the forces employed by the rival lines are so well matched, as to end in a drawn game, however furious may have been the contest.

Railroad companies admit to the fullest extent the evils of the system. Go to the Erie railroad, and its managers will repeat what has been said by ourselves. But, say they, we must employ runners against the *Central* and other lines; and until the above is put down by a combination of companies, we must practice it in self-defence.—The Central would probably make a similar reply. So with the two Michigan lines. All admit and deprecate the evil, but all continue to practice it, from a feeling of necessity to defend themselves from the aggressions of their neighbors. A constant warfare is thus kept up, expensive to the companies, annoying in the highest degree to the traveler, and demoralizing to the parties employed, and to the general tone of service upon railroads.

The evil has its origin in a mean and short-sighted jealousy, equally inconsistent with the true interest of railroads and of the public. A state of warfare is one of semi-barbarism, whatever the objects for which it is waged. No road can, in the long run, gain any advantage over

others, except by furnishing *better* accommodations to the public. Such advantages runners cannot secure. On the contrary, so long as they are employed, companies will be very apt, in relying upon *their* exertions for business, to neglect those measures which lie at the foundation of all success.

The roads centering in New York, with the Central, can correct the abuse complained of, if they will. Should they all agree to discontinue the practice of soliciting business, and support offices in which the tickets of all are sold upon equal terms, they would do just as much with vastly *less* cost. No slight reward would be the satisfaction on the part of the managers, which always accompanies an honorable and highminded manner of conducting business operations. There is no department in railroad management that calls more loudly for reform. When the remedy is so simple, shall it not be applied?

For the American Railroad Journal.
Broadway Railroad, etc.

MR. EDITOR,—Many plans have been brought forward since I suggested the idea of an *elevated* railroad in Broadway. I have read the article in your last number of the "Railroad Journal" on this subject. The *objections* you refer to against the plan noticed by you of a *covered* way over the sidewalk for the running platform of the cars, are certainly valid, upon the ground of its obstructing the view, and injuring the beauty and convenience of this *municipal highway*.

If the *necessity* should occur to get rid of the inconveniences of the present travel of the omnibuses on Broadway, then I would recommend the resort to my original suggestion of an *uncovered* and elevated railway, which will cause no obstructions to be introduced of a character offensive to the eye. It consists of a *single* rail, placed on a line with the curb of the pavement, and elevated so high as that the bottom of the cars will be level with the second floor of the houses along Broadway. This height, of course, will free the footway below from any inconvenience from the passing train. It will be understood, Mr. Editor, that the cars on this plan of road will straddle the road, that is, the body of the cars will be *below* the line of the rail on each side of the same, the wheels being *above* in place of below the floor of the carriage. This state of the cars in operation insures them against the possibility of flying off the track.

I inclose you a paper, which gives a statement of the merits of this plan of railway, and of its economy compared with the present plan of these roads, and I would respectfully invite the attention of railroad companies to it, for the line best suited for the safe conveyance of passengers.

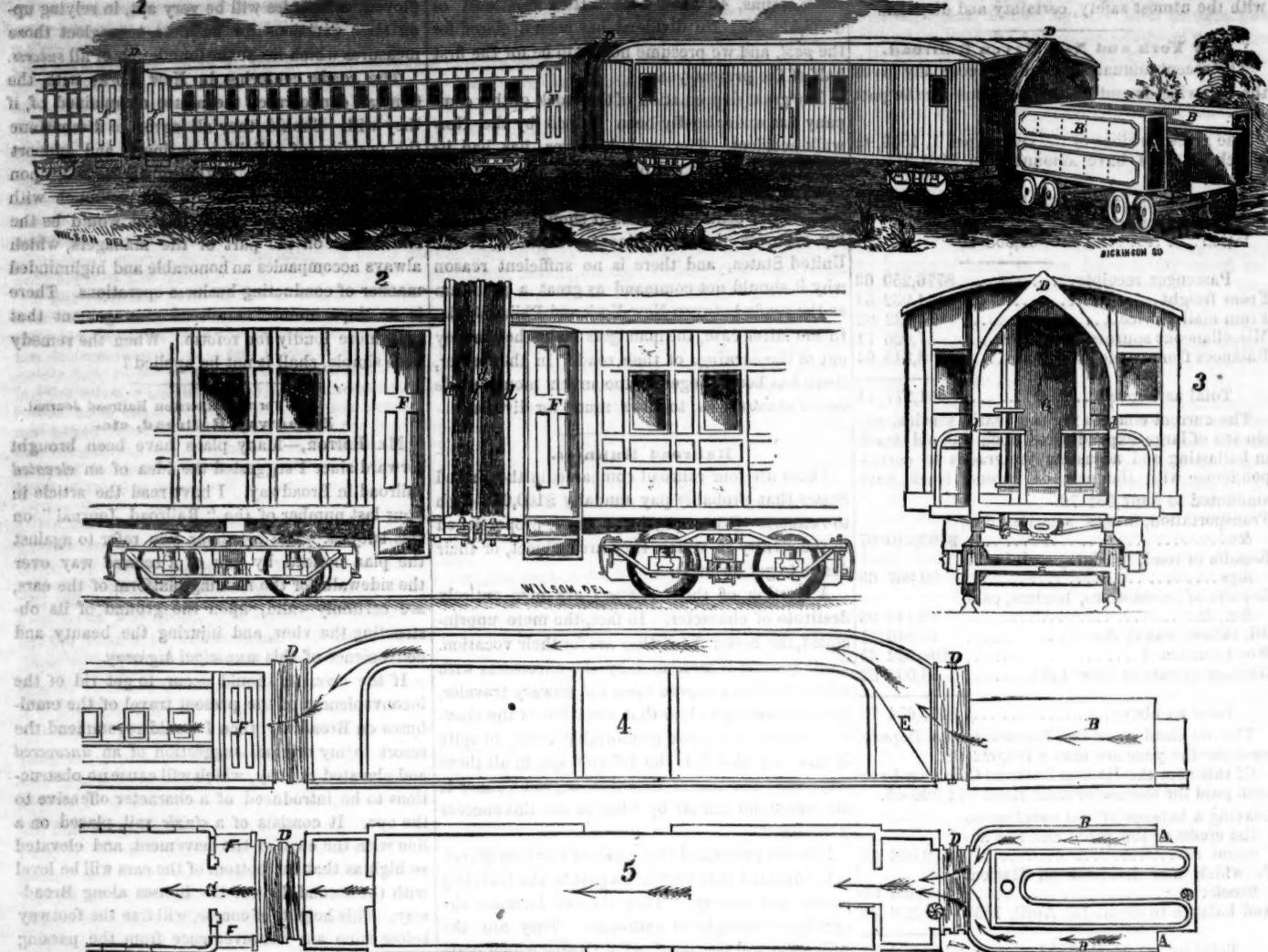
My object in bringing forward this plan is to lessen the dangers and accidents of the present plan of railroads, under increased speed.

The traveling public, at least, look for an immunity from these disasters. Life is too precious to be trifled with under the present system; and it is due to a confiding public, that those who provide this means of locomotion should also insure safety of transit to persons and property transported.

I will not encroach, sir, further on your time than to appeal to our railroad companies to adopt this plan for their passenger trains.

ROBERT MILLS,
Engineer and Architect,
City of Washington.

Waterbury and Atwood's Mode of Ventilating Railway Cars, and Excluding Dust, Smoke and Cinders.



The mode represented in the above cut has been in use on the Naugatuck Railroad over a year, thus testing it through all the seasons, and the great satisfaction it has given to all connected with the road as well as to the passengers over it, induces the proprietors of the patent to offer it to Railroad companies for adoption.

It consists in taking the air near the front of the train at the sides of the tender and passing it through, over or under the baggage car, and, by suitable connections and partitions conveying it from car to car through the whole length of the train.

Fig. 1, is a train without the engine.

Fig. 2, is a side elevation of two passenger cars to show more particularly some of the details of the arrangement.

Fig. 3, is an end elevation for the same object.

Fig. 4, is a longitudinal section of tender, baggage car with air chamber, and part of a passenger car with connections, showing the course of the air over a baggage car, &c., as indicated by the arrows.

Fig. 5, is a plan view of fig. 4.

A. A. are the mouths of the air receivers on each side of the tender, as shown in fig. 1, 4 & 5; and ought to contain at least 6 square feet each. B. B. are the out sides of the receivers by which the air is conducted along the sides of the tank to its rear, where it is directed into the car coupled with the tender by the guide, C., Fig. 5. D. D. D. are flexible connections between the cars. In Fig. 2 & 3 are seen the frames of wood, d d d, to which the flexible connections are nailed. E. is a movable canvass guide to direct the air coming from the rear of the tender over the top of the baggage car. F. F. F. are doors in the partitions across the platforms. G. is the rear door of the train by which the quantity and pressure of the air passing through the cars is regulated.

As a train in motion in a still, hot summer day, is always surrounded by the heated, gasses, steam, smoke, soot and cinders from the engine, and by the dust raised in the rapid onward sweep of the train, and as at such times the full force of the sun is exerted upon the thin walls and low roof of the cars, it is of the first importance that a large volume of air should be passed through their

whole length, far more than is needed for healthy respiration. As an evidence of the great quantity required, we see passengers endure the dust, smoke, sparks &c., at an open window rather than be deprived of the requisite quantity of air, though it may be loaded with impurities. It will be observed that it is an important feature of our invention to pass the air received at the forward part of the train, from car to car, in such quantities as will enable us to make a cooling breeze in hot weather, though only enough for healthy respiration be used in cool weather. We have found that for one car only, an opening of at least eight square feet, transverse section, is necessary since it is a rapidly passing current that is desired by passengers in hot weather; and this essential requisite for comfort is lost if a portion of the air is taken away by open windows, registers, or any other similar device. The current must be passed on without diminution, and any plan which does not effect this, is radically defective and will be ineffectual in the second or third car. It is therefore necessary to supply a train of one car only, with a current that would be sufficient for a train of ten cars, and any arrangement of receivers

large enough to take in sufficient air, forward, for each separate car would involve such cumbersome attachments as to require an enlargement of engine houses, cuts bridges &c., and if the attempt were made to take it in at each separate car it would be charged with impurities, which we believe it practically impossible to separate, so as to render it fit to enter a car.

The following is submitted as an evidence of the estimation in which this invention is held by those who are thoroughly and practically acquainted with it.

CHAS. ATWOOD, Agent,
Birmingham, Ct.

OFFICE MADISON AND INDIANAPOLIS R. R. Co.
Madison, May 6, 1854.

MESSRS. WATERBURY AND ATWOOD:

GENTS:—Your esteemed favor of the 27th ult., was duly received, in which you ask me for a statement of my experience and the practical result of your mode of ventilation and exclusion of dust, smoke and cinders from Railway Cars, as applied to the cars of the Naugatuck Railroad while I was Superintendent of that Road, and in answer, I have much pleasure in saying that your mode of ventilating and excluding dust, smoke and cinders from cars was attached to the train on the Naugatuck Railroad about the 1st of June, 1853, and was continued on the train as long as I remained on the road, and that the improvement exceeded my expectation, and operated to my entire satisfaction, as well as that of every person connected with the road, and to the unqualified approbation of all passengers over the road; and in order to do justice to your valuable invention, which in my opinion is to be known and appreciated on all railroads where passenger cars are run, I would state that I consider the advantages of your mode of ventilation, such as to render it superior to any that has been offered to the Public, for the following reasons, viz:—

1. Complete exclusion of dust, smoke, soot and cinders.

2. The perfect adaptation for supplying a train of passenger cars with sufficient air, not only for healthy respiration, but, during the heat of summer, with a cool and refreshing breeze, which can be regulated and adapted instantly by the conductor to any state of the atmosphere.

3. Its easy adaptation in winter, to effect a perfect ventilation and a delightful equalization of heat.

4. Perfect safety to passengers and conductors in passing from car to car, and comfort of being protected from the inclemency of the weather by covered passages.

5. Freedom from annoyance of dust, smoke and cinders, upon opening the doors by the conductor, railway operatives or passengers, when the cars are in motion.

6. The great security and comfort of brakemen, when at their brakes, thereby rendering them at all times more efficient than heretofore, especially in cold and inclement weather, and a protection of their health as well as their comfort.

7. The preservation of the furniture and upholstery of the cars to an extent sufficient in the wear of the cars, to more than cover the cost of the attachment of the improvement.

8. The train is run, worked, coupled and managed in all respects with equal facility, convenience

and cost, as before the attachment of this ventilator.

9. That I am of opinion, and am not alone in entertaining it, that there are no cars in this country as comfortable for the traveller, as those now in use on the Naugatuck Railroad, and feel a confidence and pleasure in recommending them to the favorable consideration of all railroad men.

Very respectfully, yours,

PHILO HURD,

Vice-Prest. Madison and Indianapolis and Peru Railroad.

OFFICE NAUGATUCK RAILROAD COMPANY,
Bridgeport, June 22, 1854.

MESSRS. ATWOOD & Co:

GENTLEMEN:—Having been shown a letter of Philo Hurd, Esq., formerly Vice-President and Superintendent of this Railroad Company, and now occupying a similar position with the Madison, Indianapolis and Peru Railroad Company, in reference to your plan of excluding dust from railway cars, and furnishing an agreeable ventilation to the same, I am free to say, that I add my testimony to his, in reference to the same.

After one year's experience in the use of your ventilator upon our road, I am enabled to state that it is perfectly successful in its operation.

It is simpler and cheaper in respect to construction, than any other method before the Railroad public. I consider its use necessary to every well regulated Railroad.

Yours truly,

E. F. BISHOP,
President Naugatuck Railroad Company.

Railroad Exhibits.

A correspondent furnishes the following:—In looking over the annual reports to the Legislature of the various Railroad Corporations in this State, I find that the earnings and receipts are in most cases represented to be the same. Such representations are, however, not only incorrect in point of fact, but eminently calculated to mislead all who are not acquainted with the details of such business.

Persons who have ever looked into the freight houses of any of our railroads must have noticed that they always contain more or less property which has been transported over the road and the freight thereon, or price for transportation earned, though not yet collected or received, because the owners and consignees have not called for their property. I believe it is the rule of all railroads to require the payment of their charges on the delivery of the property and that only a very small part of the freight is paid in advance at the place of shipment. It is therefore reasonable to suppose that the charges on goods remaining in the freight houses are for the most part unpaid and the aggregate amount where the road is of much length, and consequently having a good many stations, must be considerable.

In like manner a road may be so connected with other roads that its receipts may embrace not only its own earnings but a portion also of theirs. Thus a passage ticket may be sold at a New York office for Chicago or St. Louis, and the price thereof will all be included in the reported receipts of the local company. It is obvious, however, that a large, perhaps the largest portion of it belongs to the various connecting lines. So also with freight, and where such connections are extensive, the amount so collected for them must be very large. These collections in the aggregate constitute "receipts"; what remains after paying the connecting lines their shares are "earnings".

It is clear, therefore, that to report the earnings of any road to be the same as their receipts, is an abuse of terms, occasioned either by gross inattention to accuracy, or designed deception of the pub-

lic. Indeed, it cannot well be doubted that it has not unfrequently been done by interested parties for the very purpose of conveying to stockholders and the public at large, an exaggerated idea of their actual business. Such statements may not be signed by any responsible officer, but their effect, and unquestionably their intent, are the same as if they were, and the fact that they are suffered to pass uncontradicted shows that the managers are willing that they should be so understood. I am gratified to perceive indications in certain quarters of reform in this particular.

It can readily be imagined that this practice of publishing receipts, makes a good deal of figuring necessary to balance the accounts at the end of the year. The company being committed by their monthly reports, are obliged to account for the amount as so much actually earned, and this can only be done by charging the difference to "construction," or some other head of account equally appropriate.

It cannot be concealed that the published reports of Railroad companies are looked upon to a great extent with more or less distrust. It is conjectured that they are published for a purpose, and are not a true and *bona fide* exhibit of the business done on them. Such distrust is generally to be lamented, and therefore all ground for it should be removed. The immense capital invested and the magnitude of the interests involved, demand not only the strictest integrity and economy in their administration, but the most thorough and systematic accuracy in their accounts and exhibits. This is both right and politic. In no other way can the confidence of capitalists both here and in Europe, and others whose aid is indispensable in the prosecution of these great enterprises, be secured and retained. Success in this, as in every other great interest of society, to be enjoyed must be deserved. VERITAS.

We are requested so publish the above article which appeared in the *Commercial Advertiser* of May 23.

We know of only one company the Erie, which has been accustomed to publish receipts for earnings. But this was under a different *regime*, and has been discontinued, not leaving as we are aware, any cause of complaint.

We see no difficulty in making out at an early day, sufficiently correct statements of the *earnings* of a road, no matter how intimate may be its relations with other companies. Providing the money were *received* as earned, there would be no difficulty in determining the proportions that each company was entitled to. There is nothing in the way of determining what each company *should* receive, as their respective interests in a given freight, is a matter of *prior* agreement. It is well known that the *earnings* of English Railroads are reported weekly, and we all know that the relations of these are much more ramified than are our own.

We never knew but one company that confounded *receipts* with *earnings*. We exposed the practice long ago, and we are happy to say that it has been corrected.

Cumberland Coal and Iron Company.

The *Alleganian* says the following is the statement of the present condition of this Company:

Railroad, rolling stock, mine cars, machinery, &c.	\$575,316.55
Canal boats, schooners, barges and other personal property, real estate in Cumberland, Alexandria, and Baltimore.	405,079.42
Mining lands, improvements at the mines, &c.	4,595,897.71
Cash assets, bills receivable, balances due on accounts.	207,197.82
	\$5,902,491.60

2,822 shares of the capital stock belonging to the company.

There is no floating debt. The amount of bonded indebtedness is \$587,000.

American Railroad Journal.

Saturday, July 1, 1854.

Agents for the Journal.

To prevent imposition we feel constrained to state that we have no regularly authorized agents in this Country. To persons in the commission agency business or book trade who remit us names of new subscribers with the price of subscription, we allow the usual commission and send the paper as desired, but we hold ourselves responsible for the acts or contracts of no man not connected with this office and regularly authorized by us to do business in our name.

Persons desiring the *Journal* should send their address directly to us by mail and may also remit their subscription to this office in bank notes current in their own State, unless they can conveniently procure funds of this State. All such remittances will be duly acknowledged by mail on their receipt. Persons receiving accounts of their indebtedness to this office, will oblige us by remitting as above, at their earliest convenience.

Railway Intelligence.

The interests of those who constitute the bone and sinew of all enterprises, having for their ultimate object the internal improvement of the country—the stockholders—demand that they should be made thoroughly acquainted with all the operations of the new and old roads in the country. In other words, they must be "posted" in all the earnings and expenditures, cost of construction and operation, amount of earnings devoted to running expenses, and amount carried to construction account, amount of dividend declared, and how payable, whether in stock or cash, etc.

It is for this purpose, and to ascertain the progress of new and the success of old roads, that they take the *Journal*. They reasonably expect to find in it all the above information, and they are not usually disappointed. Contractors take it for the purpose of seeing what works are to let, and what companies are organizing with a view to letting contracts. Bankers take it, to see whether the securities of companies are trustworthy; and if they cannot find in it lucid statements of their affairs, they are apt to look upon them with distrust. Manufacturers of machinery and equipment take it, that they may see what companies are in want of such articles as they are prepared to furnish, and whether the credit of the Company is such as to guaranty the security of their sales to them. And, Railway Companies themselves take it, in order to know where they may get all the accommodations and articles mentioned.

So, it will be seen that the columns of the *Journal* are looked upon as a sort of exchange, where all the views of the various parties enumerated may be compared, through their advertisements and communications; as a means for the general diffusion of knowledge upon all topics connected with railway enterprises. The stock and bond list of the *Journal* is about being perfected, in a manner to convey much additional intelligence which will be of the greatest importance to all parties.

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Miles open.	Capital paid in.	Debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net Earnings for last official yr.	Dividends for do.	Price of Shares	
Atlantic and St. Lawrence... Maine.	150	1,538,100	2,978,700	5,978,700	254,743	113,520	none	83	
Androscoggin and Kennebec...	55	824,863	1,043,540	2,036,140	177,003	80,053	none	30	
Kennebec and Portland...	72	1,078,673	1,439,694	2,520,981	168,114	100,552	none	41	
Port., Saco and Portsmouth...	51	1,355,500	123,884	1,459,384	208,669	.....	6	95	
York and Cumberland...	20	285,747	341,100	718,605	23,946	11,256	none	24	
Boston, Concord and Montreal. N. H.	93	1,649,278	622,200	2,540,217	150,588	79,659	none	27	
Concord...	35	1,485,000	none.	1,485,000	305,805	141,836	8	104	
Cheshire...	54	2,078,625	720,900	3,002,094	287,768	55,266	5	35	
Northern...	82	3,016,634	.....	.....	328,782	163,075	5	49	
Manchester and Lawrence...	24	717,543	.....	.....	.....	.....	6	88	
Nashua and Lowell...	15	600,000	none.	651,214	132,545	51,513	8	104	
Portsmouth and Concord...	47	.....	.....	1,400,000	.....	.....	none	.....
Sullivan...	26	.....	.....	673,500	.....	.....	none	10	
Connecticut and Passumpsic. Vt.	61	1,097,600	550,000	1,745,516	.....	.....	none	21	
Rutland...	120	2,486,000	2,429,100	5,577,467	495,397	266,539	none	9	
Vermont Central...	117	8,500,000	3,500,000	12,000,000	.....	.....	.....	58	
Vermont and Canada...	47	1,500,000	.....	1,500,000	Leased to the Vt. Cent.	82	.....	.....
Western Vermont...	51	892,000	700,000	.....	Recently opened.	none	.....	.....
Vermont Valley...	24	.....	.....	.....	.....	.....	none	.....
Boston and Lowell...	Mass.	28	1,830,000	206,190	2,044,536	434,599	114,098	6	87
Boston and Maine...	"	83	4,076,974	150,000	4,111,345	803,024	418,358	8	100
Boston and Providence...	"	55	3,160,000	402,826	3,579,041	509,326	226,639	6½	77
Boston and Worcester...	"	69	4,500,000	590,541	4,850,754	887,219	418,289	7	96
Cape Cod branch...	"	29	421,950	180,000	633,906	68,942	26,412	5	40
Connecticut River...	"	52	1,591,110	286,363	1,802,244	258,220	102,098	4	52
Eastern...	"	58	2,850,000	1,192,975	3,120,391	620,810	310,875	6	77
Fall River...	"	42	1,050,000	6,208	1,050,000	294,183	126,589	8	90
Fitchburg...	"	67	3,540,000	191,500	3,716,870	626,659	214,633	6	84
New Bedford and Taunton...	"	20	500,000	none.	529,964	188,442	46,839	7	117
Boston and New York Central...	"	74	1,159,228	953,370	2,221,068	90,315	35,214	none	50
Old Colony...	"	45	1,964,070	295,038	2,293,534	374,897	122,866	none	97
Taunton Branch...	"	11	250,000	none.	307,186	159,738	21,490	8	.....
Vermont and Massachusetts...	"	77	2,233,939	1,189,615	3,207,818	244,328	13,144	none	114
Worcester and Nashua...	"	46	1,140,000	194,445	1,342,593	182,398	81,807	5	60
Western...	"	155	5,150,000	5,319,520	9,953,258	1,525,224	746,736	7	94
Stonington...	R. I.	50	.....	467,700	.....	240,572	110,892	.....	68
Providence and Worcester...	"	40	1,457,500	300,000	1,791,999	291,417	120,892	6	97
Canal...	Conn.	45	922,500	500,000	1,400,000	.....	.....	4	65
Hartford and New Haven...	"	72	2,350,000	800,000	3,000,000	639,529	294,269	10	116
Housatonic...	"	110	.....	.....	2,500,000	329,041	168,902	none	.....
Hartford, Prov. and Fishkill...	"	50	.....	.....	In progress	69,629	.....	none	.....
New London, Wil. and Palmer...	"	66	558,861	800,000	1,511,111	114,410	.....	.....	.....
New York and New Haven...	"	61	3,000,000	1,641,000	4,978,487	806,713	428,173	7	83
Naugatuck...	"	62	926,000	440,000	.....	.....	8	.....	.....
New London and New Haven...	"	55	750,500	650,000	1,380,610	Recently opened.	none	40	.....
Norwich and Worcester...	"	54	2,121,110	701,600	2,596,488	267,561	116,965	4	53
Buffalo and New York City. N. Y.	"	91	900,000	1,550,000	2,550,500	Recently opened.	none	.....	.....
Buffalo, Corning and N. York...	"	132	.....	.....	In progress	.....	none	65	.....
Buffalo and State Line...	"	69	879,636	872,000	1,921,270	Recently opened.	.....	130	.....
Canandaigua and Niagara F...	"	50	.....	.....	In progress	.....	.....	.....	.....
Canandaigua and Elmira...	"	47	425,509	582,400	987,627	76,760	39,360	none	.....
Cayuga and Susquehanna...	"	35	687,000	400,000	1,070,786	74,241	23,496	none	.....
Erie, (New York and Erie)...	"	464	10,000,000	24,008,865	33,070,863	4,318,962	1,800,181	7	62
Hudson River...	"	144	3,740,515	7,046,395	10,527,654	1,063,659	338,783	none	61
Harlem...	"	130	4,725,250	977,463	6,102,935	681,445	324,494	4	44
Long Island...	"	96	1,875,148	516,246	2,446,391	205,068	44,070	none	28
New York Central...	"	504	23,085,600	10,773,823	33,859,423	.....	.....	99	.....
Ogdensburg (Northern)...	"	118	1,579,969	2,969,760	5,133,884	480,137	195,847	.....	14
Oswego and Syracuse...	"	35	350,000	206,000	633,598	92,353	46,072	.....	70
Plattsburg and Montreal...	"	23	174,042	131,000	349,775	Recently opened.	none	.....	.....
Rensselaer and Saratoga...	"	25	610,000	25,000	774,495	213,078	96,737	.....	.....
Rutland and Washington...	"	60	850,000	400,000	1,250,000	Recently opened.	.....	.....	.....
Saratoga and Washington...	"	41	899,800	940,000	1,832,945	173,545	135,017	none	30
Troy and Rutland...	"	32	237,690	100,000	329,577	Recently opened.	.....	33	.....
Troy and Boston...	"	39	430,936	700,000	1,043,357	Recently opened.	none	.....	.....
Watertown and Rome...	"	96	1,011,940	650,000	1,693,711	225,152	116,706	8	92
Camden and Amboy. N. J.	"	65	1,500,000	.....	4,327,499	1,388,385	478,413	10	148
Morris and Essex...	"	45	1,022,420	128,000	1,220,325	149,941	79,252	7	.....
New Jersey...	"	31	2,197,840	476,000	3,245,720	603,942	316,259	10	131
New Jersey Central...	"	68	986,106	1,500,000	2,379,880	260,899	124,740	3	.....
Cumberland Valley. Penn.	"	66	1,184,500	18,000	1,265,143	118,617	76,890	5	.....
Erie and North East...	"	20	600,000	.....	750,000	Recently opened.	.....	125	.....
Harrisburg and Lancaster...	"	36	830,100	718,227	1,702,523	265,827	106,320	8	55
Philadelphia and Reading...	"	95	6,656,832	10,427,800	17,141,987	2,480,626	1,251,987	7	77
Phila., Wilmington and Balt.	"	98	5,000,000	2,399,166	8,067,285	868,038	541,769	5	74

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.

	Miles open.	Capital paid in	Funded debt.	Tot. cost of road and equipmt.	Gross Earnings for last official year.	Net earnings for last official yr.	Dividend for do.	Price of shares
Pennsylvania Central.....	Penn.	250	9,768,155	5,000,000	13,600,000	1,948,827	617,625	97
Philadelphia and Trenton.....	"	30	.....	.....	.....	.....	.....	.....
Pennsylvania Coal Co.....	"	47	.....	.....	.....	.....	102	58
Baltimore and Ohio.....	Md.	381	13,118,902	5,677,103	22,254,338	2,038,420	798,193	7
Washington branch.....	"	38	1,650,000	.....	1,650,000	348,622	216,237	8
Baltimore and Susquehanna.....	"	57	.....	.....	.....	413,673	152,536	.....
Alexandria and Orange.....	Va.	65	.....	.....	In prog.	.....	.....	.....
Manassas Gap.....	"	27	.....	.....	In prog.	.....	.....	.....
Pittsburgh.....	"	64	769,000	173,867	1,163,928	227,593	72,370	7
Richmond and Danville.....	"	73	1,372,324	200,000	In prog.	.....	.....	70
Richmond and Petersburg.....	"	22	685,000	.....	1,100,000	122,861	74,113	none
Rich., Fred. and Potomac.....	"	76	1,000,000	503,006	1,531,238	254,376	113,256	7
South Side.....	"	62	1,357,778	640,000	2,106,467	62,762	.....	.....
Virginia Central.....	"	107	1,673,684	469,150	2,392,215	210,052	99,077	10
Virginia and Tennessee.....	"	73	2,650,091	707,958	3,545,256	109,268	42,736	none
Winchester and Potomac.....	"	32	180,000	120,000	416,532	89,776	.....	12
Wilmington and Raleigh.....	N. C.	161	1,338,878	1,134,698	2,965,574	510,038	153,898	6
Charlotte and South Carolina.....	S. C.	110	.....	.....	.....	.....	.....	.....
Greenville and Columbia.....	"	140	1,004,231	500,000	In prog.	.....	.....	.....
South Carolina.....	"	242	3,858,840	3,000,000	7,002,396	1,000,717	609,711	7
Wilmington and Manchester.....	.....	.....	.....	.....	In prog.	.....	.....	125
Georgia Central.....	Ga.	191	3,500,000	418,187	3,465,879	986,074	535,608	8
Georgia.....	"	211	4,000,000	1,214	.....	934,424	456,468	7½
Macon and Western.....	"	101	1,013,088	163,000	1,277,834	278,739	149,960	9
Muscogee.....	"	71	.....	.....	In prog.	59,590	21,731	.....
South Western.....	"	50	586,887	150,000	743,525	129,395	71,535	8
Alabama and Tennessee River.....	Ala.	55	.....	.....	In prog.	.....	.....	.....
Memphis and Charleston.....	"	93	776,259	400,000	In prog.	.....	.....	.....
Mobile and Ohio.....	"	33	879,868	.....	In prog.	.....	.....	.....
Montgomery and West Point.....	"	88	688,611	.....	1,330,960	173,542	76,079	8
Southern.....	Miss.	60	.....	.....	.....	.....	.....	.....
East Tennessee and Georgia.....	Tenn.	80	835,000	541,000	In prog.	.....	.....	.....
Nashville and Chattanooga.....	"	125	2,093,814	850,000	In prog.	.....	.....	68
Covington and Lexington.....	Ky.	38	1,430,150	900,000	In prog.	.....	.....	80
Frankfort and Lexington.....	"	29	357,218	.....	584,902	87,421	44,250	.....
Louisville and Frankfort.....	"	65	.....	.....	.....	.....	.....	.....
Maysville and Lexington.....	.....	.....	.....	.....	In prog.	.....	.....	45
Cleveland and Pittsburgh.....	Ohio.	100	1,979,100	1,142,200	3,279,908	432,682	267,278	10
Cleveland and Toledo.....	"	147	2,000,000	1,600,000	.....	.....	.....	88
Cleveland, and Erie.....	"	95	.....	.....	.....	.....	.....	.....
Cleveland and Columbus.....	"	135	3,027,000	408,200	3,655,000	777,793	483,454	12
Columbus, Piqua and Indiana.....	"	46	.....	.....	2,000,000	.....	.....	65
Columbus and Lake Erie.....	"	61	.....	.....	.....	.....	.....	.....
Cincinnati, Ham. and Dayton.....	"	60	2,100,000	500,000	2,659,658	321,793	200,967	102
Cincinnati and Marietta.....	.....	.....	.....	.....	In prog.	.....	.....	62
Dayton and Western.....	"	40	310,000	550,000	925,000	Recently	opened.	75
Dayton and Michigan.....	"	20	.....	.....	In prog.	.....	.....	56
Eaton and Hamilton.....	"	36	.....	.....	.....	.....	.....	.....
Greenville and Miami.....	"	31	.....	.....	.....	.....	.....	.....
Hillsboro.....	"	37	.....	.....	In prog.	.....	.....	.....
Little Miami.....	"	84	2,668,402	482,000	3,169,733	667,559	352,133	10
Mansfield and Sandusky.....	"	.....	900,000	1,000,000	1,855,000	.....	.....	.....
Mad River and Lake Erie.....	"	167	2,387,200	1,767,000	4,110,148	540,518	113,401	77
Ohio Central.....	"	57	.....	.....	In prog.	.....	.....	79
Ohio and Mississippi.....	.....	.....	.....	.....	"	.....	.....	.....
Ohio and Pennsylvania.....	"	187	1,750,700	2,450,000	.....	Recently	opened.	.....
Ohio and Indiana.....	"	.....	.....	.....	In prog.	.....	.....	.....
Scioto and Hocking Valley.....	"	44	750,000	300,000	.....	Recently	opened.	.....
Columbus and Xenia.....	"	54	1,291,700	26,000	1,310,062	314,434	168,612	10
Evansville and Illinois.....	Ind.	31	.....	.....	In prog.	237,506	.....	107
Indiana Central.....	"	.....	.....	.....	"	.....	.....	77
Indiana Northern.....	"	131	.....	.....	"	.....	.....	.....
Indianapolis and Bellefontaine.....	"	83	.....	.....	"	Recently	opened.	90
Indianapolis and Cincinnati.....	"	90	1,128,486	1,289,000	1,869,932	Recently	opened.	76
Lafayette and Indianapolis.....	"	62	.....	.....	.....	opened.	.....	.....
Madison, Indianapolis & Peru.....	"	159	2,647,700	1,241,300	2,400,000	516,414	288,075	10
Terre Haute and Indianapolis.....	"	72	632,387	663,100	1,353,019	105,944	71,446	4
Rock Island and Chicago.....	Ill.	.....	.....	.....	.....	.....	.....	108
Chicago and Mississippi.....	"	135	2,400,000	4,000,000	4,600,000	.....	.....	.....
Illinois Central.....	.....	92	.....	500,000	In prog.	478,548	286,152	123
Galena and Chicago.....	"	.....	.....	.....	.....	.....	.....	.....
Michigan Southern and Ind. N. Mich.	"	815	.....	8,741,564	7,276,616	1,200,922	586,929	17
Michigan Central.....	"	282	.....	3,977,563	8,618,505	1,145,598	582,816	8
Pacific.....	Mo.	38	.....	non	In progress	Recently	opened.	94

It is perfectly clear that the AMERICAN RAILROAD JOURNAL with its THIRTY THOUSAND readers, composed of, and embracing nearly all the classes mentioned above, as in any manner interested in the construction, operation or furnishing of Public Works in this country, and the Capitalists and their agents abroad, who invest in American Securities; is the best channel through which to communicate all important Railway intelligence. By this channel it reaches all the parties interested in its receipt; it penetrates every nook and corner of this land, from the banker's office in Wall street to the Engineer's tent in Washington Territory, California and South America, while in Europe it is the medium of communication upon the state of Railway affairs in this country to the ROTHSCHILD'S, BARINGS, and a long list of bankers and capitalists in the English, French and German Cities, and the iron workers who trade iron for the bonds of our roads.

In this view of the case, it becomes a matter of much importance to Railway Companies, that they should communicate *authentic* statements of their affairs to the public and their creditors through the columns of the *Journal*. It is no exaggeration to state that such intelligence reaches, at least, *ten* times the number of persons whom it is desirable to enlighten, through this medium than any other. Those desiring such information, seek for it here, as the most appropriate place, and, as they find it in a convenient form for preserving for future reference. Our foreign correspondents often enquire why Railway Companies do not more generally advertise their notices of dividends, detailed statements of monthly earnings and expenses, of progress of new work, &c., &c. These matters are of great interest to them, as guides in their investments. If a Railway Company would enjoy good credit for its securities at home and abroad, it should do its portion toward disseminating correct intelligence.

Shunk on Railway Curves.

We have received from the publishers Messrs. E. H. BUTLER & Co., of Philadelphia a very neat little work of the above title which is devoted to information, designed to be of great use to young engineers. It purports to contain a full description of the instruments, the manner of adjusting them, and the methods of proceeding in the field, new and simple formulae for compound and reprise curving,—rules for calculating excavation and embankments,—staking out work &c., together with tables of natural sines and tangents, radii, chords, ordinates and others of general use in the profession, by WM. F. SHUNK, Civil Engineer.

The work is evidently the result of much labor and investigation, though we hardly feel competent to pronounce upon its utility or correctness.

To Contractors.

The attention of contractors and bridge builders is invited to the lettings of the work on the State canals, advertised in the *Journal* of to-day. It will be seen that a large amount of work is to be let, and at this time of stringency in the money market, which occasions some suspension and delay on certain portions of railroad work, it is worthy the attention of those contractors who desire to keep their men and materials employed at good wages and sure pay. However much private enterprises may be delayed, the great work of the "Enlargement" must go ahead.

Flushing Rail Road.

One of the peculiarities and inconveniences of New York, is the difficulty of reaching any of its suburbs, and of keeping up a constant and convenient communication with them. The only egress from the city by land, is by the head of the Island, from 8 to 12 miles from the City Hall. Four miles of this distance is through the densely inhabited portions of the city, requiring nearly an hour for its passage by any mode of conveyance. The time consumed in reaching the country has consequently been so great as to retain a very large portion of the active and business population on the Island; a population which in the case of other cities, spread themselves over the surrounding country.

A very important improvement has just been completed, as one of the remedies of the inconvenience complained of—the Flushing Railroad. Flushing lies about 10 miles from New York, on the north side of Long Island, and immediately upon the Sound. In natural beauty it cannot be surpassed. It is well known that the north and south shores of Long Island present a most striking contrast, the latter being a low, wide, sandy, level plain, while the northern shore is high, undulating, in some places broken, and deeply indented, every few miles, by clear and sparkling bays. No town presents a greater variety of beautiful building sites, which combine delightful prospect, pure air and water, and a fertile soil. All these natural advantages have been heightened by a superior culture, particularly in the matter of trees, of which the finest specimens we have ever seen, can be found in Flushing. This town as is well known, has for a long time been the seat of the finest nurseries in the United States. They have created, and have furnished the means of gratifying a degree of taste in all the branches of horticulture, which can be found in no other suburb of New York. The whole town is divided into beautiful gardens and beautiful groves, both of ornamental and forest trees, while the varied topography gives to nearly every house the benefit of a fine view of the Sound and its numerous bays.

This beautiful suburb has, like nearly all the others of New York, been comparatively isolated from the city. It maintains pretty constant Steam-boat communication, but an excessively cold winter freezes up the bay, while the lowest tides frequently disturb the regular running of the boat in the summer, rendering this mode of conveyance too uncertain to suit the necessities of the man of business, who must report himself in the city with military exactness, at a certain hour. Up to the present time consequently, Flushing has retained all the characteristics of the country, and is scarcely more densely inhabited than any agricultural town 100 miles distant.

This isolation has now been removed by the construction of the Flushing Railroad, which was opened to the public on the 26th inst. The City terminus of this road is at Hunter's Point, near Green Point, opposite 35th street, and about 3½ miles from the Fulton Market Slip, to which the boats of the road are to run. The advantage of running to Hunter's Point is, that the Railroad train can maintain its full speed to the dock, from which to the city, the passengers can be transported at the rate of 15 miles to the hour. In this manner the intervention of horse power is obviated.

The time necessary for the *through* trip will not exceed 35 minutes, which is no greater than that consumed in going from 25th street to the City Hall. As far as *time* is concerned, a person residing in Flushing, loses no more in getting to his business, than if he resided in any of the upper Wards, in which the entire business portion of the city will soon be found. The Railroad will in a few years constitute Flushing another Williamsburgh or Brooklyn. It has advantages for residences that these can never possess. At the next National Census, it will probably be a city of 20,000 inhabitants.

The Railroad we presume will not rest long at Flushing. As going east, the country continues to improve in beauty and attraction, we regard the eventual extension of this Road to Cold Spring as certain. The North Shore of Long Island will then become the *Summer* resort of the surplus population of the city, as well as the permanent abode of all who prefer the quiet of a beautiful and healthy country residence, to the restraints and inconveniences and unhealthiness of a city life, particularly—the filthy city of New York.

Past, Present, and Future of the Pennsylvania Public Works.

Nearly one hundred years ago, measures were commenced for the improvement of internal communication in the then *province* of Pennsylvania. Sixty years ago, four miles of the Schuylkill and Susquehanna Canal were opened. Twenty eight years ago, the *State* of Pennsylvania commenced its great system of railroads and canals.

Never had a public improvement a greater aim. In no other instance, in this country, was a greater obligation ever assumed, for such a purpose, by any community. A connection of the Delaware and Ohio rivers, it was hoped, would control the course of the internal commerce of the Northern states. The state system of improvements was established; the enormous public debt of Pennsylvania was created, while a yet larger sum was expended upon the cherished enterprise of the state. The state has now contracted a debt of forty millions, and expended, as has been publicly stated, one hundred millions in the construction and operation of her public works.

The state, is now seeking a purchaser for her "main line" of public works, at the sum of \$10,000,000. These works are represented in the state reports, to have cost about \$16,500,000 although this does not include the vast sums sacrificed by the state on their account and not represented in the first cost.

To this offer the Pennsylvania Railroad Company reply in an estimate of the real value of the works, as an object for their own purchase and operation. The Company appraise the whole establishment at \$7,000,000, but remark that such a valuation is based upon a large prospective increase of business, upon the continuance of the Columbia Railroad as a part of the Pennsylvania Railroad, and upon the assumption that a railroad stock paying common interest is worth *par*.

Whether the state would be influenced by a possible offer, based upon the estimate of the Railroad Company, is not known. The acquisition of \$7,000,000, if applied towards the extinction of state bonds, would probably save more interest than the operation of the works is likely to pay.

The "main line" of public works, extending from Philadelphia to Pittsburg, 395 miles, comprise 118½ miles of railroad with a rise and fall of about 4,470 feet; and 277 miles of canal, having 174 locks, and a rise and fall of 1142 feet. The principal summit overcome at the Alleghanies is 2291 feet above tide.

Regarded as a commercial route, this line of 395 miles has about 5,600 feet of rise and fall, involving three transhipments at the intersection of the railroads and canals—while the western harbor of the canal is at the head of the navigation of the Ohio, and the eastern depot one hundred miles from the ocean. Were the Union canal and the Schuylkill Navigation employed as the eastern division of the main line, the entire length would be about 425 miles, with 38 miles of severe mountain grades, and about 300 canal locks; or about four times the lockage per mile of the Erie canal.

Leaving out the Columbia road, the Pennsylvania Company do not value the canal portion of the line and Portage railroad beyond \$3,000,000, about four times of their nominal cost to the state.

The future value of the "main line" beyond Columbia, will be nothing until it is improved by an outlay of \$3,000,000, for in its present condition it would probably cost more to operate it than would be earned.

It is believed by many friends of Pennsylvania improvements that the position of the "main line" is a good one for the command of the trade of the Ohio valley. They argue that it would cost no more to bring freight, by land, from the Ohio valley to the eastern base of the Alleghanies than to Lake Erie. This offsets Ohio river navigation against that of the lake Erie, and puts 150 miles of the Hempfield and Pennsylvania roads, with grades of 66 feet, and a rise of nearly 1500 feet, against the transit across Ohio. It is a forced comparison, not altogether favorable to the "main line."

The Ohio valley, East of Scioto county, Ohio, is not however a great producing or trading district. The counties on the Ohio bank rank generally as second and third rate in the population of Ohio, while the Virginia counties with the exception of Ohio county, are among the most thinly settled in that state. Below Scioto county we apprehend there is but little trade seeking its way up stream to Pittsburg or Wheeling, which would ever be likely to benefit the Pennsylvania canal line.

But into whatever hands the public works may fall, the state of Pennsylvania must continue, for aught we can see, to tax their trade. Something must be taxed, and roundly too, else there will be no revenue. The customers of the Pennsylvania Railroad Company, alone, paid, the last year, \$555,725 11 as *tolls* and *taxes* to the state, besides the usual local taxes to which all railroad property is subject. So far, the business of the public works has been taxed heavily towards the payment of the interest upon their excessive actual cost.

The public burdens compared with those of the state of New York, are a collection of nearly \$6,000,000 of revenue from 2,500,000 people in Pennsylvania, against that of \$2,500,000 from 3,500,000 people in New York; or three and a half times more from each individual in Pennsylvania than

in New York. So far the "public works" of the former state have been saddled with the load, until the public, although they *felt*, could not see the difference. The value of the public works will depend, in future, upon the amounts to which they are assessed for the support of the state; while if they are placed, in this respect, upon an equitable basis with other property, we must await, with much curiosity, the effect on *all* property.

Locomotive Boiler for Anthracite Coal.

Much of the difficulty in burning Anthracite coal in locomotives has arisen from the contracted proportions which are unavoidable in locomotive furnaces. Where a twenty horse engine has, perhaps, 15 square feet of grate area, a locomotive consuming ten or twenty times more steam has not more than twenty or twenty five feet grate. The success of Winans' coal engines dated from the first enlargement of their grates. The Baltimore coal engines have now less than twenty five square feet of grate, an allowance which with their present form of furnace appears to be all that is practically attainable. But the present size of these grates has been obtained by extending them lengthwise until the front ends of the bars are nearly beyond the reach of the fireman's shovel. Their length is *seven feet*. To be able to fire such a furnace without too much labor, an opening has been made through the water space which forms the top of these furnaces, and a coal box has been applied, having a door on its top and a sliding plate in the bottom. This box is charged with coal, the top covered and the bottom withdrawn, by which the coal is dropped upon the center of the grate. This is a very unsatisfactory method of firing as the coal is not spread over the grate, leaving a large proportion uncovered, and preventing a proper combustion even of what is dropped in the grate. Many of the firemen upon the Reading road will not feed the coal through the top of the furnace at all, but do their best to keep a proper fire by feeding through doors at the hind end.

To secure what is desirable, the largest practicable extent of grate and the easiest access for firing, we have proposed, for freight engines having small driving wheels all in front of the firebox, that the tubes be lengthened sufficiently to place the firebox entirely behind the rims of the back drivers, and that the grate be then extended across the track to the greatest width allowable for the engine. Upon this plan a grate of from 30 to 50 square feet would be practicable upon the narrow gauge, and one from 8 to 10 feet more upon the six feet gauge. Such a grate would be fed from doors across its entire width, whereby every inch of surface could be properly covered with coal. The firebox would be extremely shallow at its sides, having sloping walls, ascending to the crown. The crown sheet would therefore be quite small, and would not consequently sustain an excessive pressure.

Such a firebox, unless the forward end of the engine was quite heavy, would throw it out of balance. Winan's coal engines, however, as constructed with furnaces of seven feet length, and unsupported behind the firebox, weigh heaviest on the *forward* wheels. If a heavy engine, like a first class burden engine, have a proper amount

of material in the fastening of the cylinders, such a plan of furnace as we propose, would not in our opinion, throw the engine injuriously out of balance.

The only other objection is in the use of extremely long tubes. Such a boiler would require from 15 to 17 feet length of tubes. If copper tubes however, 1½ inches diameter and 18 feet length, will remain tight, as they do in many cases, we should not hesitate to say that iron tubes, 3 inches in diameter and 16 feet long, well set, would remain equally tight. Iron is less expanded by heat than copper, and once well set, will resist more strain. A 3 inch tube would allow nearly double the bearing surface for a joint at the ends as one of 1½ inches. The 2½ inch iron tubes, 14 feet long, in the engines made by the Baltimore and Ohio road, are reported as giving no trouble by leakage.

So far as the length of tubes would affect the draught of the fire, we believe that to be a matter depending altogether upon the size of the tube, and that for this reason a three inch tube of 16 feet length, would give as free draught as a 2 inch tube of 11 feet. A single tube of 3 inches diameter would have more than double the area of opening of a 2 inch tube, and by that circumstance would contain a sufficient amount of heat to compensate for its extra length.

Such a boiler would conform with the conditions required in heavy engines for working maximum trains, and for working heavy grades. It is probable that a boiler upon the plan we have proposed will be tested within a few months upon an important line of road interested in the adaptation of coal to locomotives.

John Hampson, Esq.

We regret to announce the death of JOHN HAMPSON, Esq. of Carrollton, La., one of the oldest Railway Engineers in this country. Mr. HAMPSON was conversant with both Civil and Mechanical Engineering, and has from time to time communicated important and interesting information to the *Journal*, to which he was for many years a subscriber, up to the date of his decease. Although for several years Mr. Hampson has been a resident of Louisiana, he was formerly a resident of this city, and much interested in the early manufacture and trial of locomotives. The following extract from a letter received from him some years since, contains some interesting facts for young machinists:

In 1829, the Delaware and Hudson Railroad Company imported 2 Locomotives from England, of the old form; one of them was erected and tried in the West Point Company's shop, at the foot of Beach street in your city, and the other was tried at Dunscombe's near the East River. I did not see them on a Railroad, but I heard they did not succeed. In the latter part of 1829, or perhaps in the beginning of 1830, a Locomotive Engine was made at the said West Point Company's Shop, for the Charleston and Hamburg Railroad. This was employed in conveying materials for the continuation of the Road, and I believe was the first one made in America that performed successfully; about the end of the latter year, another one was made at the same establishment for the same Railroad Company. In the beginning of 1831, an Engine was also made at the same place for the Albany and Schenectady Rail-

road; the writer assisted in its construction and tried it on the Railroad; it was called the De Witt Clinton, and was of small size, not weighing quite 4 tons; it would not take over 3 cars (small ones) from Albany up to Schenectady, however, *alone* it attained a speed of near 40 miles an hour. Soon after this Engine commenced running, which was about July 1831, one of Stevenson's improved Locomotives arrived on the Road from England; it had 4 wheels of the same size, and 10 inch cylinders, 14 inch stroke. The contrast between this Engine and the American one, was great, the latter being a beautiful, light, race-horse, looking machine, while the former looked heavy and "Elephantic" in comparison; it was immediately christened "John Bull." However, it proved to be an excellent machine, and the writer has, on the Mohawk and Hudson Railroad (in 1831,) frequently driven it, with a train of cars behind it, 5 miles in 12 minutes. This, I believe, was the first English Engine that run with regular passenger trains in this country, at least I am not aware of any one before it; by the way, this Engine was subsequently altered, and I believe was the first Locomotive under which a truck was placed, which was done in the Railroad Company's Shop, under the direction of Mr. Asa Whitney, the Company's Superintendent.

Yours, &c.,

JOHN HAMPSON,
Engineer New Orleans and Carrollton R. R.

Journal of Railroad Law.

RAILROAD DAMAGES FROM USING AN UNSUITABLE CAR.

The following is a fuller statement and also the charge of Judge Slosson in the case of McQuade vs. the Erie Railroad Company which we briefly reported last week.

This was an action to recover damages for injuries occasioned by an accident on one of the defendants' railroad trains. The plaintiff alleged that he was traveling as a newsboy on an express train of the New York and Erie Railroad Company, and that in place of the ordinary baggage car a freight car had been substituted, which was thrown from the track near Owego, whereby the plaintiff was severely injured, his leg being broken, and his head severely cut. Testimony was adduced tending to show that a freight car was more liable to run off the track than a baggage car, especially when not heavily loaded. Damages laid at \$10,000.

In defence it was shown that the Company had made a contract with one Skelly, a news agent, by which it was provided, for a stipulated sum, that he should have the privilege of sending two boys on each train as far as Middletown, and one beyond, but it was in evidence, as well from Skelly's testimony as from that of one of the officers of the Company, that it was expressly agreed that the Company should not assume any risk or liability in respect to Skelly or his boys. It appeared that a person by the name of Sickerson was the regular newsboy, whose business it was to distribute papers upon this train, but that his hand being injured he had obtained McQuade to take his place. There was conflicting evidence as to whether this was done with Skelly's knowledge or consent. Both Sickerson and McQuade were on the train at the time of the accident, and the conductor testified that McQuade had no pass, but that he consented that he should go on. The accident took place beyond Middletown, while the train was on its way to Elmira. The defendants further denied that there was any negligence on their parts as the cause of the accident, and they called to the stand the Superintendents of the New Jersey, Harlem and Hudson River Railroad Com-

panies, and various persons who testified, that a freight car was as safe as a baggage or passenger car; and it was in evidence that the track was in good order a short time previous to the accident, and that upon examination it was found that the rail had been raised some inches from its chair by the action of the frost.

His Honor Judge Slosson instructed the Jury substantially as follows:

Railroad Companies are common carriers—They are bound to take passengers, and as respects them, they are bound to take the greatest possible care and diligence. The distinction between gross negligence and simple negligence is not applicable to such cases. The dangers are so great that public policy requires strict adherence to this rule. The rights of a passenger rest upon a contract with the Company for a consideration; but a passenger is not the only one entitled to rights—any party lawfully on board is equally entitled, unless there be something to take his case especially out of the rule. He is lawfully on board, though not a passenger, if he is there by virtue of a special contract or by permission of the Company. Such a contract may limit the liability of the Company; and the permission, if it be a case of permission, must be taken in reference to the case itself, the character of the party to whom it is given, and the circumstances under which it was given. Giving a party on the cars permission to go thereon, would not give greater rights than he would have had without such permission, except that it would put him there lawfully.

If he sustained a peculiar position or relation or office, and was in the cars in such capacity, but for the time without such evidence as the rules of the Company might require, then giving the permission removes the latter objection, but leaves the party subject to whatever restrictions or disabilities, if any, he might have been under before such permission was given. Thus the verbal permission to remain in the present case removed the objection that the plaintiff was without a pass, but leaves him in the same position in other respects as he would have been if he had had a pass. There is no evidence that the plaintiff was on board the train as a passenger. The questions then are:

1. Was the plaintiff there by virtue of a contract made by the defendants with himself; if so, what were the terms of the contract?

2. If not, did he sustain a relation to the Company which would limit his rights against them? Such a relation may be created by virtue of a special agreement between the parties.

If then, the Jury should be of opinion that there was a special contract with the plaintiff himself, or that he sustained a relation to the Company which would limit their liability, the plaintiff's rights must be determined by such special contract or by the mature and condition of such relation between the parties. If they should be of opinion that there was no such special contract between the plaintiff and defendants, nor any such special relation between them, then, it being conceded that the plaintiff was permitted by the conductor to remain on board the cars, which makes the question whether he had a pass or not immaterial, another question will arise, viz:

3. Was the disaster the result of the defendants' negligence? and if so.

1. What is the proper amount of damages to compensate the plaintiff for the injuries sustained?

The two first questions may be considered together, since, in effect, the decision of one will determine that of the other. There is no pretence of any special contract with the plaintiff himself. The only contract alleged is one with Skelly. Neither Skelly nor the plaintiff had any right to sell papers in the cars, except by virtue of a contract with the Company. The contract with Skelly, if you are satisfied from the evidence that any such contract was made, must content the rights of the plaintiff. The plaintiff claims to have been in the cars as a newsboy, by virtue of a pass from

Skelly, in his capacity of a principal news-agent privileged to carry on that occupation in the cars; and this could only be by an agreement with the Company, as already stated. Was there any such agreement, and, if so, what were its terms?

After reviewing the evidence on this subject, his Honor proceeded as follows:

If, from the evidence, you think that it was agreed that the Company should not be liable for injuries caused to Skelly or his newsboys, there is an end of the case, for the plaintiff can have no greater rights than Skelly, whether his right to be in the cars depended upon the pass, or upon the permission of the conductor. In either case he is under a restriction of rights as against the Company. If, however, you find no such special contract to have in fact been made, it being conceded that the plaintiff was permitted, notwithstanding he had no pass to remain in the cars, then the next question will be, was the disaster the result of the defendants' negligence.

While it is true that railroad companies are held to a high standard, they are not liable for every casualty. To render them accountable, the accident must have occurred through their *default*. They are not responsible for inevitable accidents. And it is for the Jury to determine what was the cause of the casualty in the present case. The learned Judge then briefly reviewed the evidence in the case, and then left it to the Jury, who returned a verdict for the plaintiff for \$8,000.

For the plaintiff, L. E. Bulkeley; for the defendants, D. B. Eaton and Jas. Kent.

Morris and Essex Railroad.

The stockholders of the Morris and Essex Railroad Company met at Hackettstown on the 14th inst. The annual report states the receipts of the year to be \$190,241 46, viz:

From Pass \$118,391 06 | Mails \$2,869 32
Freight 73,842 39 | Rents & sund. 188 69

The expenses were \$94,281 68—the following being the items,

The balance after paying expenses is \$95,959 78
Paid two semi-annual dividends \$43,402 97
Paid interest upon debt of

Company 7,593 46—50,996 43

Balance clear profits during the year \$44,963 35

The number of passengers carried during the year, exclusive of commuters and free, was 245,925. Two engines, costing \$24,485, and 18 cars, costing \$16,545, have been added to the equipment of the road. The following gentlemen were chosen Directors for the ensuing year: William Wright, Joel W. Condit, Beach Vanderpool, J. C. Garthwaite, Stephen D. Day, Daniel Babbit, Jona Parkhurst, William N. Wood, Aaron Robertson.

Land Grant to Railroads.

We publish in another column, an eloquent memorial addressed by the Alabama and Tennessee Railroad Company to Congress, praying for a Grant of Land to aid in the construction of their road. We readily endorse the opinion expressed as to the value and importance of the above line, and would be glad to see it aided in every legitimate way. The land asked for lies upon the line of the road. We admit that the road will be built *without* the aid asked for; and this we regard as one of the strongest arguments in favor of a grant, as indicating clearly, that the road *should* be built. Certainly those engaged upon a meritorious project are much more deserving of encouragement, than those who are pushing forward a *bogus* one.

Strike on the Erie Railroad.

We learn that the Engineers on the Erie Railroad, have complied with the rules of the Company, and have gone to work again.

Great Western Railroad of Canada.

The receipts of this Road for the week ending June 23, were.....	\$4,081 12
Passengers, Freight, &c.....	1,238 00
Total.....	£5,264 12
Receipts for the year to June 23	118,155 8
Total.....	£123,420 0

Grand Trunk.

The receipts of the Grand Trunk for the week ending June 3d, were—

4792 Passengers, First Class,	\$4,406 69
1184 " Second "	727 43
4020 Tons Merchandise,	9,917 68
595,128 Feet of Lumber,	1898 74
438 Cords of Fire Wood,	514 59
Mails, &c.	779 27

\$18,244 40

For the week ending June 10—

4,760 Passengers, First Class,	\$5105 12
1,165 " Second "	675 08
3,690 Tons Merchandise,	9,882 68
436,861 Feet of Lumber,	1,727 82
350 Cords of Fire Wood,	406 00
Mails, &c.	779 27

\$18,576 83

United States Mint.

The coinage of the Mint for May was—

Gold,	\$3,270,830.00
Silver,	210,100.00
Copper,	8,175.96

\$3,988,605.96

The gold bullion deposited in May, was:

From California,	\$3,400,000
From other sources	196,000

Total \$3,596,000
Silver bullion deposited 134,000

The deposits of precious metals for the first 5 months of the year were:

	1853.	Gold.	Silver.
January	\$4,962,097	\$14,000	
February	3,548,523	13,560	
March	7,533,752	70,000	
April	4,766,000	2,550,006	
May	4,425,000	1,447,000	
Total	\$25,235,372	\$4,094,500	

	1854.	Gold.	Silver.
January	\$4,215,579	\$108,000	
February	2,515,000	1,166,000	
March	3,982,000	147,500	
April	3,442,000	129,000	
May	3,596,000	196,000	

Total \$17,749,579 \$1,746,560

Showing for the four months of this year a decrease of \$7,485,792 in the deposits of gold, and of \$2,348,060 in the deposits of silver, making a total decrease of \$9,833,852.

Taunton Branch Railroad.

The earnings of the Taunton Branch Railroad for the year ending May 31st, 1854, were:

Passengers	\$100,089 55
Freight	66,659 74
Mail	1,151 99
Interest	1,062 03

\$168,953 31
Expenses

150,478 79

Net profits

\$18,474 52

A semi-annual dividend of 4 per cent. was declared.

Car Ventilation.

In the *Journal* to-day, we present an illustrated description of another mode of Car Ventilation, designed also to exclude dust and other objectionable matter. The same theory is followed in the application of this method of MESSRS. WATERBURY and ATWOOD, denoted in our remarks upon the plan of MR. LANCASTER, some weeks since; but the whole mode of operation in the reception of the air, and its conduct throughout the train is entirely different.

It will be observed that Mr. WATERBURY's Ventilation has been successfully tried on the Naugatuck Road in Connecticut, for more than a year past. The Railroad Commissioners in their late report to the Legislature of that State speak of its operation in the following words:—

"The Commissioners found in use on the passenger trains of this Road, 'Atwood & Waterbury's Rail Road Car Ventilator' by whose operation all dust and smoke is excluded from the cars, and a current of fresh air, of more or less volume, according to the will of the regulator, is continually passing through them when the train is in motion."

Within the last two weeks one of the Way trains of the New Jersey Railroad and Transportation Company, has been fitted up with this plan of ventilation, and we have had the pleasure of witnessing its operation. As represented in the Cut, by this method the Cars of the train are connected by the enclosure of the space between them with flexible materials; the air is received in channels formed by placing outer casings on both sides of the tender, and thence carried over the baggage cars and through the doors of all the passenger cars which must remain open, the side windows being closed.

The experiment, so far as we could see, was entirely successful. The day was very warm and close; scarcely any motion of the air being perceptible. Although the passage of the train raised a heavy cloud of dust, none of it came into the car, through which there was an agreeable circulation. We do not, however, regard this test as by any means, a severe one. The train was short, five cars only, no baggage car. We should have preferred a long passenger train, as a better test, for the reason that the forward cars of a long train are always much less dusty than the rear ones.

As to the baggage cars, we should like to have seen it demonstrated whether the passing of the air up over the baggage cars and then precipitating it down into the doors of the passenger cars is any obstruction to its passage, or causes any decrease of its volume. However, these are points which we presume have been settled on other roads where it has been tested.

The testimony of MR. HURD is competent, we suppose, and we certainly think it strong, and to the point. There is no longer any use of breathing dust while travelling in cars. This point is settled. The annoyance can be avoided, and it can be done at a *low cost*. There are two methods before the public and between the two, competition will be likely to reduce the cost of ventilation to such an amount that expense will constitute no valid excuse to Companies for longer compelling their passengers to inhale a dusty, smoky, and fetid atmosphere.

The expense of this plan it is thought, will not amount to over forty or fifty dollars the car.—

This is a mere nothing, and should not deter Companies from adopting it, one moment after they become satisfied of its utility. The proprietors, we understand, are now ready to fit up trains at once, upon application.

Vessel Tonnage of the U. S.

The tonnage of the United States on the 30th of June, 1853, amounted to 4,407,010 tons, and the amount of tonnage lost at sea, and condemned as un-seaworthy in the year ending at the same period, was 55,278 tons, or about 12-10 per cent only of the whole. The number of vessels built in the United States in the fiscal year of 1853, is given at 295 Ships, 271 Steamers, 95 Brigs, 681 Schooners, and 394 Sloops, showing an aggregate of 1710 vessels, amounting to 425,572 tons. Of this amount, the States producing them were as follows:

	Vessels.	Tons.
Maine	351	118,916
New York	289	88,224
Massachusetts	205	88,015
Pennsylvania	191	31,539
Ohio	90	21,203
Maryland	122	16,901
Connecticut	67	9,422
New Hampshire	10	8,666
Kentucky	30	8,592
New Jersey	58	7,107
Virginia	40	6,599
Delaware	33	4,435
Michigan	35	3,304
Missouri	22	3,583
Indiana	9	3,455
Rhode Island	11	3,170
District of Columbia	42	2,743
Wisconsin	14	2,422
South Carolina	38	1,993
North Carolina	22	1,746
Louisiana	17	1,346
Illinois	9	1,158
Vermont	4	218
California	2	140
Tennessee	1	45
Total	1710	425,572

Milwaukee and Watertown Railroad.

We have received and read with much satisfaction the first Annual Report of the Directors of the Milwaukee and Watertown Railroad Company, bringing up the record of their transactions to the first day of May last past. This company was duly organized on the 4th day of January, 1853, by the election of thirteen Directors, under a very liberal charter, granting them the right to locate and construct a single or double track from the Milwaukee and Mississippi Railroad, in the county of Waukesha, to the city of Watertown, and subsequently to extend the same to Portage city, Columbia county, and to La Crosse, on the Mississippi River. In June, 1853, the contract for building the road as far as Watertown was let to Messrs. Bishop, Stewart & Co. Under this contract, according to the report of the Chief Engineer, E. H. Broadhead, two-thirds of the grading is finished, the bridging and masonry completed, eight-ninths of the cross-ties delivered, and all the iron, chairs and spikes purchased and in course of delivery. There is nothing in the way, therefore, says the same officer, of "having the road in operation as early as the first of September next."

The cost of the road, complete, at cash prices, is estimated at \$740,000, or \$23,870 per mile, including 6 locomotives, 4 passenger, 4 baggage, and 100 freight cars. The business of the road, calculated upon the actual returns of the business of the plank road for 1853, is put at \$162,500.—Deducting expenses of operating, interest on bonds and rent to the Milwaukee and Mississippi Railroad Company for use of track and depot grounds, there remains \$38,900, applicable to dividends on stock, which gives about 12 per cent. But this, it is remembered, is founded on last year's business of the plank road; and the chief engineer

well says that he thinks it safe to estimate the increase of the present year at one-third. Mr. Broadhead is proverbially close and cautious in all his estimates, as well of the cost as of the business of railroads, and we have no doubt that the result will abundantly verify his very favorable opinion of the Milwaukee and Watertown Railroad as an investment.—*Milwaukee Sentinel*.

Relative Strength of Iron.

Prof R. W. JOHNSON and others, having instituted experiments as to the strength of the different manufactures of iron in various Countries put forth the results contained in the annexed table. The fig. represent the number of pounds pressure per square inch endured by each "make" at the yielding point.

Missouri Bar Iron, lbs. per sq. inch.....	47,909
Fourchambault (French).....	47,904
Ste. Chambaud "	49,000
Tennessee Iron.....	50,000
Superior English.....	52,828
English Iron.....	45,842
Welsh "	57,976
Salisbury "	58,000
Swedish Bar.....	58,185
Centre Co. (Penn.).....	58,400
Lancaster Co., (Penn.).....	58,661
Essex Co., (N. Y.).....	58,105
English Cable.....	59,912
Staffordshire, (Eng.).....	59,472
Swedish, (2d).....	60,928
English Cable, hammered.....	71,000
Best English.....	72,352
Russia Bar.....	76,069
Phillipsburg, wiredrawn.....	89,162
Jackson Company's.....	89,582

Fort Wayne and Chicago Railroad.

We understand that the directors of this road have thought it prudent under existing circumstances, to change the plan of operations, and instead of working as heretofore along its whole length, with a view to a simultaneous opening, to concentrate the forces mainly on the eastern portion reaching to Columbia, Whitley county, in order that the road may be completed in divisions connecting with the finished roads from the East. At an early date in September next it is designed to commence track laying from the Summit City to the West, and to open twenty miles by November to run in connection with the Ohio and Indiana.

In the mean time the heaviest sections on the Western Division, requiring the longest time, will continue to progress.

The iron for the whole road to Chicago has been purchased, and its delivery is soon to be commenced.

A large portion of the cross ties has already been delivered for the Western as well as the Eastern division, and a fair portion of the grading done.—*Fort Wayne Times*.

Grand Rapids & Indiana Railroad Company.

The following are the officers and directors of this newly organized company: Joseph Lomax, President; Wm. H. Campbell, Secretary; Sylvester R. Shelton, Treasurer; Josiah D. Cook, Chief Engineer; Geo. Walker, Resident Engineer.

Josiah C. Cook, Joseph Lomax, of Marion, Indiana; Joseph G. Van Horn, of Grant Co., Ambrose W. Henley, Andrew J. Neff, Amos M. Hackney, Lewis Baily, J. E. B. Rose, Abraham Stahl, N. D. Clouser, George S. Howell, Sylvester R. Shelton, and William Henley, of Hartford City Directors.

This company was organized January 18th 1853, with a subscription of 2200 shares at \$25 each. We have spoken of it previously under the name of Indiana, Kalamazoo and Grand Rapids Railroad Company. Though the name at the head of this article is the name under which the company was chartered; the office of the company is at Hartford City, Blackford county, Indiana.

The Buffalo, Brantford and Goderich Rail-way.

At a meeting of the Stockholders, held at Brantford on Thursday last, the old Board of Directors, with a single exception, was re-elected for the ensuing year. The exception which we have mentioned refers to Fayette Rumsey, Esq., who was chosen by our Common Council to supply the place made vacant by the resignation of Myron P. Bush, Esq.

The Board of Directors now stands as follows:—Messrs. Sherwood, Wadsworth and Rumsey, Buffalo; Mr. Cleghorn, Fort Erie; Mr. Oldfield, Dunville; Messrs. Lewis and Brown, Goderich, and Mr. Hamilton, Stratford.

At a subsequent meeting, the Hon. James Wadsworth, was with great unanimity re-elected President; Mr. Clement, Vice President, Archibald Gilkinson, Secretary and Solicitor, and William Wallace, Chief Engineer. We congratulate the Company upon the strength and influence of their official force, assured that the public will heartily endorse their action.—*Buffalo Commercial Advertiser.*

Ohio and Mississippi Railroad.

ELECTION OF DIRECTORS.—The stockholders of the Ohio and Mississippi Railway Company met at their office in Cincinnati yesterday, and elected the following Directors for the ensuing year: James C. Hall, Charles Stetson, John Baker, Eden B. Reeder, Charles W. West, Thomas Phillips, Richard W. Keys, Charles D. Coffin, Nathaniel Wright, Jethro Mitchell, George W. Cochran, Henry H. Goodman, John Slevin, Thomas Gaff, Abner T. Ellis, Cyrus M. Allen, Meda W. Shields, Richard A. Clements, John Cobb, H. Trept, and John Ross. These gentlemen composed the old Board, and will meet this morning for the election of officers.

The road is now opened to Seymour, on the Jeffersonville railroad, 89 miles from Cincinnati, forming a railroad connection between that city and Louisville, Ky.

Evansville Indianapolis and Cleveland Straight Line Railroad.

We are gratified to understand that the work on this road is going briskly forward. Our indefatigable fellow-citizen, Willard Carpenter, still has his shoulder to the wheel. He is pushing things forward with his usual energy. The work is now going on rapidly between Evansville and White River, and the distance, 45 miles, will be graded at an early day. A large number of men are employed under sub-contractors, and good health prevails among them. The road will be in running order to its connection with the Ohio and Mississippi railroad, 54 miles, within one year from next fall. This is an early day to set for the completion of so great a work as these 54 miles will be, but we have no doubt Mr. Carpenter's calculations will as usual be found correct.—*Evansville Journal.*

Illinois and Wisconsin Railroad.

It is known to most of our readers that the Illinois and Wisconsin Railroad is completed and in operation thirty-one miles to Beer Grove. Two passenger trains leave the city daily, and the road is already doing a large business. The trains leave at 8 o'clock in the morning and at 2 P. M. The road is of the six feet or broad gauge, and will soon be one of the most important and popular roads leading into the city.

The grading to Woodstock, fifty miles from the city, is nearly completed, and it will be finished to that point and in operation by the first of August and sooner if the iron can be brought forward from the East. From Woodstock to the State Line, the grading is in a state of considerable forwardness, and beyond that to Janesville is nearly ready for the superstructure.

We learn from E. F. Johnson, Esq., Chief Engineer, that all the rolling stock necessary to operate the road to the State Line, seventy miles, is already on the track. It is confidently expected that it

will be finished and in operation to Janesville, by the first of October next.—*Chicago Dem. Press.*

Railroad Iron Chairs.

The Lackawanna Iron and Coal Co., are now prepared with increased facilities to contract for Rails and Chairs at their works at Scranton, Penna.

Address S. T. SCRANTON Prest, at Scranton, or at the office of the Company in New York, 72 Beaver St. 264.

NEW YORK STATE CANALS.—NOTICE TO CONTRACTORS. In pursuance of a resolution of the Contracting Board, notice is hereby given, that sealed proposals will be received by the undersigned for the construction and completion of the work upon the several Canals of this State, described in the following tabular statement at the times and places therein mentioned:—

CHAMPLAIN CANAL.

Proposals when and where received:—At the Canal Commissioner's Office in the City of Albany until the 6th day of July, 1854, at 10 o'clock A. M.

	Amount
Description of the work.	penalty in bond.
2 Combined Locks.	\$10,000 Sept. 1. 1855.
1 Single Lock.	6,000 " "

1 Road Bridges, located at Fort Ann..... 500 July 1, 1855.

ENLARGEMENT OF THE ERIE CANAL—EASTERN DIVISION.

Proposals when and where received:—At Engineer's Office in the City of Utica until the 8th day of July, 1854, at 10 o'clock A. M.

Section No. 13.....	\$1,000 April 1, 1855.
" 14.....	2,000 " 1855.
" 15.....	6,000 " "
" 16.....	7,500 " "
" 17.....	4,000 " "
" 18.....	5,000 " "
" 19.....	1,500 " 1855.
" 125.....	7,000 " 1855.
" 126.....	6,000 " "
" 137.....	7,500 " "
" 128.....	6,000 " "
" 129.....	7,500 " "
" 130.....	7,000 " "
" 134.....	5,500 Sept. 1, 1855.

Waste Weirs on Sections 127 and 134..... 1,600 Sept. 1, 1855.

Bridge Abutments on Sections Nos. 15, 16 and 17..... 2,500 July 1, 1855.

Bridge Abutments on Sections Nos. 18 and 19..... 1,200 " "

Bridge Abutments on Sections Nos. 125, 126, 127, and 128..... 1,200 " "

Bridge Abutments on Sections Nos. 129, 130, 134 and at New London..... 1,400 " "

Culverts on Sections Nos. 16 and 17..... 700 " "

Culverts on Sections Nos. 126 to 128..... 2,600 " "

Culverts on Sections Nos. 129, 130 and 134..... 1,250 " "

BLACK RIVER CANAL.

Proposals when and where received:—At Engineer's Office at Lyon's Falls until the 12th day of July, 1854, at 10 o'clock A. M.

Section No. 30..... \$2,000 July 1, 1855.

" 31..... 6,000 " "

Locks Nos. 99, 100 and 101..... 4,000 " "

" 102..... 2,500 " "

" 103 104 and 105..... 800 " "

" 106 and 107..... 500 " "

Bridges on Sections No. 31..... 300 May 1, 1855.

Raising Bridges across Black and Moose Rivers..... 300 Oct. 1, 1854.

ENLARGEMENT OF ERIE CANAL—MIDDLE DIVISION.

Proposals when and where received:—At the Engineer's office in the city of Syracuse, until the 16th day of July, at 10 o'clock, A. M.

Section No. 146..... \$5,900 April 1, 1855.

" 147..... 5,400 " "

" 148..... 6,100 " "

" 149..... 4,600 " "

" 150..... 15,800 " "

" 151..... 9,600 " "

Aqueduct at Chittenango..... 4,400 " "

Seneca River and Section 202 connected 21,700 Nov. 1, 1855.

Culverts on Sec. 146, 147, 148 and 149..... 1,700 April 1, 1855.

Culverts on Sec. 150 and 151..... 2,200 " "

Culverts on Sec. 200 and 201..... 900 " 1855.

Bridge Abutments on Sections 146, 147 and 148..... 1,800 " 1855.

Bridge Abutments on 150 and 151..... 1,000 " "

Bridge Abutments on 201..... 900 " 1855.

ENLARGEMENT OF ERIE—WESTERN DIVISION.

Proposals when and where received:—At the Engineer's office in the city of Rochester, on Tuesday, the 18th day of July next, at 10 o'clock, A. M.

Section No. 212..... \$3,500 April 1, 1856.

" 213..... 3,800 " "

" 214..... 5,100 " "

" 215..... 5,000 " "

" 216..... 3,700 " "

" 217..... 11,000 " "

" 218..... 14,000 " "

" 228..... 5,700 " "

" 229..... 5,800 " "

GENESEE VALLEY CANAL.

Proposals when and where received:—At the Engineer's office in the village of Cuba, on Thursday, the 20th day of July next, at 2 o'clock P. M.

Sections Nos. 82, 83 and 84..... \$2,500 Aug. 1, 1855.

" 91 and Feeder..... 4,000 " "

" 95 and 96..... 3,200 " "

" 97..... 3,000 " "

" 98 and Feeder..... 3,400 " "

Ischua Feeder..... 6,500 " "

Ischua Aqueduct..... 1,000 " "

Culvert on Section No. 65..... 100 April 1, 1855.

Valve Gates..... 1,500 Aug. 1, 1855.

Lock Houses..... 700 " "

All propositions must be for a sum certain, as to the price to be paid or received, for each and every kind of work; and no proposition not thus defined will be received or acted upon.

Every proposal shall be accompanied by an affidavit, endorsed thereon, of each person uniting in such proposal, that he is not directly or indirectly interested in any other proposal for the same work or materials, or any part of the same; that he has no agreement or understanding with any other person to become interested in any other proposal or contract for the same work or materials, or any part thereof; and that no other person than such as shall be named in the proposal is interested in the same, or has any agreement or understanding to become interested in any contract that may be made in pursuance of such proposal.

Every proposal for work or materials embraced in the above statements shall be accompanied with a bond to the people of this State, in the penalty specified opposite each kind of work in said statement, and which bond shall be signed by the party making such proposal and two or more responsible sureties, with such evidence of their responsibility as the contracting board shall require, and which sureties shall justify in sums equal in the aggregate to twice the amount of such penalty.

Each proposal must be accompanied by the certificate of the Supervisor of the town, and the County Clerk, or the County Judge of the county in which said surety shall reside, or any two of them, as to the responsibility of said sureties.

The persons to whom the work may be awarded will be required by the contracting board to give the bond for the payment of laborer's wages, as required by chapter 278, of the laws of 1850.

No acceptance of a proposal or award of a con-

tract by the contracting board, and no contract made by the said board, or any interest in the same, shall be assignable to any person or persons, without the written consent of the Canal Commissioners.

Fifteen per cent of the amount of any work done or materials furnished, at the contract price thereof, shall be reserved by the canal commissioner until the whole work, which is the subject of the contract, shall be fully and entirely completed.

In case the contracting board shall be of opinion that the proposals made at any meeting thereof, pursuant to any advertisement, are, in consequence of any combination or otherwise, excessive and disadvantageous to the State, they may decline all the said proposals, and advertise anew for the work and materials embraced therein.

Contractors will be required to receive and use in the work all such materials as have been previously procured and delivered for any of the above work, and allow such prices therefor as may be exhibited at the several offices prior to the letting.

The prices in the contract will be considered as including the expense of furnishing all the materials, and performing all the work, according to the plans, specifications and notices exhibited at the letting.

The persons to whom the work may be awarded, will be required to enter into contract for the performance of the work within ten days after the same shall have been awarded to him, upon the terms prescribed by the contracting board.

The name or names of the persons proposing, must be written out in full, with their places of residence.

The maps, plans, specifications, quantities of materials, propositions, blank contracts and bonds will be ready for examination at the several places specified in this notice, ten days previous to the times specified for the several lettings.

Dated at ALBANY, June 9, 1854.

HENRY FITZHUGH,
FREDERICK FOLLETT, } Canal Comm'r.
CORNELIUS GARDINIER,
JAMES M. COOK, Comptroller.
JOHN T. CLARK, State Eng. and Surveyor.

To Railroad Companies and Contractors.

FOR SALE—Fifteen second hand Locomotive Engines of various sizes and descriptions and in good running order suitable for all kinds of work. For particulars apply to

CLARK & JESUP,
General Railroad Agents,
38 Exchange Place.

Also Railroad supplies of all kinds. 4125

Prosser's Patent Lap-Welded Iron Boiler Tubes.

Tubes screwed together, flush on both sides, for Artesian wells, &c. Free-joint Tubes, for Core Bars, Awning Frames, Railings, Leaders, &c.

Patent Wrought Iron Blacksmiths' WATER-TUYERES, WATER-BACKS, Etc.

Agents for KRUPP's celebrated CAST STEEL for SHAFTS, RAILWAY Axles, Tires, Platters' Rollers, &c.

P. S.—All Tools necessary for the construction or keeping in order of Tubular Boilers

24th THOS. PROSSER & SON, 28 Plat street, N. Y.

SHANAHAN & LOEBER,
181 William-st, (1st floor—Up Stairs.) NEW-YORK.

MANUFACTURERS OF
THEODOLITES, TRANSITS, LEVELS,
Surveyors' Compasses, Drawing Instruments,
Chains, Scales, Levelling Rods, &c. 110

Sewall & Crehore
CIVIL ENGINEERS,
ST. PAUL MINESOTA.
JOSEPH B. SEWALL. CHAR. FRED. CREHORE.

N. York and N. Haven R. R.

NOTICE OF SUMMER ARRANGEMENTS,

Commencing Monday, May 9, 1854.

TRAIN FROM NEW YORK.		TRAIN TO NEW YORK.	
7 A. M.—Accommodation to	5.30 A. M.—Special, from Port New Haven.	8 A. M.—Express for Boston, 5.00 A. M.—Communication from stopping at Stamford and Bridgeport.	6.15 A. M.—Accommodation from New Haven.
8 A. M.—Express for Boston,	8.15 A. M.—Accommodation from New Haven.	9.10 A. M.—Special for Port Chester.	9.35 A. M.—Express from New Haven.
9.30 A. M.—Accommodation for	10.00 A. M.—Express from New Haven, stopping at Stamford and Bridgeport.	10.00 P. M.—Express for New Haven, stopping at Stamford and Bridgeport.	10.30 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.
10.30 A. M.—Accommodation for	11.00 A. M.—Express from New Haven.	11.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	11.30 P. M.—Express from New Haven.
11.30 A. M.—Accommodation for	12.00 A. M.—Express from New Haven.	12.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	12.30 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.
12.30 A. M.—Accommodation for	1.00 A. M.—Express from New Haven.	1.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	1.30 A. M.—Express from New Haven.
1.30 A. M.—Accommodation for	2.00 A. M.—Express from New Haven.	2.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	2.30 A. M.—Express from New Haven.
2.30 A. M.—Accommodation for	3.00 A. M.—Express from New Haven.	3.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	3.30 A. M.—Express from New Haven.
3.30 A. M.—Accommodation for	4.00 A. M.—Express from New Haven.	4.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	4.30 A. M.—Express from New Haven.
4.30 A. M.—Accommodation for	5.00 A. M.—Express from New Haven.	5.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	5.30 A. M.—Express from New Haven.
5.30 A. M.—Accommodation for	6.00 A. M.—Express from New Haven.	6.00 P. M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.	6.30 A. M.—Express from New Haven.

GEORGE W. WHISTLER, Jr., Sup't.
New Haven, May, 1854.

15th 30th

Ogdensburg, N. Y., April, 1853.

15th 30th

DIVIDEND NOTICE.—The SEMI-ANNUAL INTEREST falling due in this city on the first day of May next, on the following named securities, will be paid on and after that date at the office of the undersigned on presentation of the proper coupons, viz:

The Bonds of the City of Cleveland, (Ohio) issued to the Cleveland and Pittsburgh Railroad Company 7 per cents.

The Bonds of the City of Cleveland, (Ohio) issued to the Cleveland, Painesville and Ashtabula Railroad Company 7 per cents.

The Bonds of the City of Madison, (Indiana) 6 and 7 per cents.

The Bonds of the City of Pittsburg, (Penn.) issued to the Allegheny Valley Railroad Company (payable on the first Monday of May next,) 6 per cent.

The Madison and Indianapolis Railroad Company First Mortgage Bonds, 7 per cent.

The Sciota and Hocking Valley Railroad Company First Mortgage Bonds, 7 per cents.

The Indiana Central Railroad Company Mortgage Bonds, 7 per cents.

The Wilmington and Manchester Railroad Company Second Mortgage Bonds, seven per cents.

New York, April 29, 1854.

WINSLOW, LANIER & CO., No. 52 Wall-st.

C. Floyd-Jones.,

Division Engineer 3d and 12th Divisions.

ILLINOIS CENTRAL RAILROAD.

Vandalia, Ill.

Locomotive Engines for Sale.

TWO first class engines, adapted to a 5 foot, gauge, 22 tons weight, 16 + 20 inch Cylinders, and 5½ and 6 feet drivers, built by one of the best makers in the country. New, and offered for sale because not required by those ordering them. Enquire at the office of American Railroad Journal, 9 Spruce-st, up stairs.

Dec. 24.

Passenger Cars for Sale.

TWO first class Passenger Cars, built by one of the best car builders in the country, for the Baltimore and Ohio Railroad.

The above presents a rare opportunity to any Railroad Company wishing first class cars for immediate use.

They will be sold at a bargain for cash or good paper. Enquire at the office of Bridges & Brothers, 64 Courtland Street.

New York, Feb. 21st, 1854.

Lyon's Tables of Cubic Contents, Etc.

These valuable tables are of great assistance in obtaining the cubic contents of excavations and embankments. Table 1. gives correct mean heights of cross sections with either two or three cuttings taken. Table 2. finds the cubic contents, having the mean heights at each end of the section to be calculated given. These tables possess advantages in being applicable to every variety of bases and side slopes. Engineers and others may obtain them by application at the American Railroad Journal office, 9 Spruce Street, New York, by mail or otherwise. Price \$1.50. 21.1f.

Notice to Bridge Builders.

Proposals will be received until Monday June 3 at the Engineers Office, Huntingdon Pa. for the superstructure of Bridges on Trestle Works, of the Huntingdon and Broad Top Railroad. Plans and specifications will be exhibited at the office, or Contractors may present their own plans with their bids.

S. W. MIFFLIN, Chief Eng.
Huntingdon, May 6, 1854.

EXTENSION OF TIME.

THE period for receiving proposals for the superstructure of Bridges and Trestle work on the Huntingdon and Broad Top Railroad, has been extended, by order of the Board of Directors, to Saturday evening, June 24th.

S. W. MIFFLIN Chief Eng.
Huntingdon, Pa., June 7, 1854.

To Locomotive Engine Builders and Engineers.

THE Proprietors offer for rent for a term of years, with immediate possession, the splendid property, known as the BELLEVILLE IRON WORKS, situated on the Mississippi, directly opposite the City of New Orleans, and within 300 feet of the River, with which it is connected by fine wharves and landings.

The buildings are of brick, with slated roofs, and were erected in 1848 at a very heavy expense; are of a most substantial and durable character and admirably fitted for a Foundry and Machine Shops, or almost any mechanical business. They now contain a new and powerful Engine and Boiler and sufficient machinery, say, planing machines—lathes—boring machines, blacksmith's tools, &c., &c., to employ 100 mechanics, and could be put in working order in a few days. The Buildings cover a lot 300 feet square and are amply large to receive the necessary machinery for the use of 800 to 1000 workmen.

The terminus and depot of the New Orleans, Opelousas and Great Western Railroad is situated about 300 yards from the above property, which could be availed of to great advantage for the manufacture of Locomotives and Railroad work, generally as well as Steam Engines, Sugar Mills, and other descriptions of Machinery.

There are no Shops in New Orleans for the manufacture of Railroad Machinery, and as the Railroad Companies now organized in that city contemplate the construction of over 1000 miles of road,—a large part of which is already under contract,—the property now offered for lease offers a most eligible opportunity for parties desiring to contract to furnish the Engines and Machinery,—for those roads. Responsible contractors with their works on the spot would have an advantage over Northern Workshops in contracting for the Work of the Railroads terminating in New Orleans.

The Establishment and prospect of remunerating work to be secured immediately are worthy the attention of manufacturers and Engineers generally.

Applications from responsible parties will be promptly attended to, and to satisfactory parties the proprietors of the Works can offer favorable terms and arrangements.

Letters may be addressed to

R. B. SUMNER,
No. 61 Camp Street,
New Orleans;

and further information may be had by applying to Messrs. BARSTOW & POPE, Pine Street, New York.

Locomotive Engines.

FOR SALE, two Locomotive Tank Engines, 4ft. 8½ in. gauge, made by one of the most celebrated and extensive builders in Massachusetts, and ready for immediate delivery. These engines are admirably adapted for fast travel with light passenger trains; weight, 13 tons, with 4 ft. drivers, with leading and trail wheels; cylinders 12½ in. by 20, with a separate cut-off valve. Can be examined at the works of the manufacturer. Apply to H. V. POOR, Editor Railroad Journal, 9 Spruce st., N. Y. 19tf.

Boiler and Tank Rivets, Nuts and Washers;

All Sizes of
Bolts and Bolt Ends

for Sale by
BRIDGES & BROTHER,
64 Courtland st., N. Y.

For Sale.

BY the Baltimore and Ohio Railroad Company, 24 slate cars, adapted to Railroad purposes, which will be sold at a reasonable price. For further information, apply to

SAMUEL J. HAYES,
M. of M., Baltimore and Ohio R. R. Co.,
Or BRIDGES & BRO.,
64 Courtland st., New York.

To Civil Engineers and Surveyors.

TRANSITS, Level and Surveyors' Compasses Manufactured on the most improved principle and of the Best Quality

by THOMAS HUNT,
No. 53 Fulton Street,
New York.

1910°

N. A. Boynton's

VENTILATING HEATER.

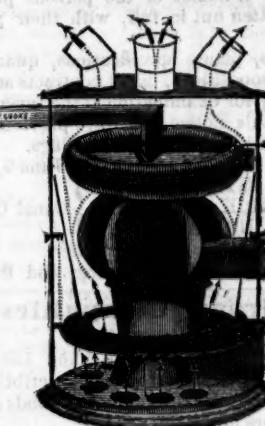
PATENTED, 1853.



BRICK.

FOUR SIZES FOR BRICK WORK.

FIVE SIZES PORTABLE.



PORTABLE.

An entirely new Article, possessing advantages worthy the attention of those in want of a Powerful and Economical Heater.

SIMPLE in construction, compact in form, and easily managed and cleaned.

Is entirely of CAST IRON; has but two joints, and those so arranged, as to prevent the escape of Gases and Smoke.

The FIRE POT is lined, the RADIATING SURFACE located above the fire, and equally exposed on all sides to the action of the cold air.

Can be set in LOW CELLARS, and, by the attachment of a SELF-CLEARING RADIATOR is especially fitted for the use of Bituminous Coal.

Of the above pattern we have four sizes, to be enclosed in brick-work, and five sizes of portables, adapted to all classes of buildings, and can be furnished at a less price than any other heaters of equal capacity in present use.

Manufactured and for Sale, Wholesale and Retail, By CHILSON, RICHARDSON & CO., 374 Broadway, New York, Also 101 and 103 Blackstone-Street, Boston.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail.

Apply to THOS. CHAMBERS, President,

September, 1854.